

# BASIC INDUSTRIES CLUSTER ANALYSIS STUDY



**City of Seattle** • Gregory J. Nickels, Mayor  
Office of Economic Development • Jill Nishi, Director

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## EXECUTIVE SUMMARY

The City of Seattle's Office of Economic Development (OED) is developing a unified, coordinated economic development strategy and plan that will help grow the City's economy. This report addresses and presents analysis of the Basic Industries Cluster, one area of focus identified by OED in the group of clusters with accessible, family-wage job-growth potential, and contributing significantly to the City's tax base.

This study addresses a broad range of business types from the Cluster covering two dimensions: (1) the businesses located in the City's designated Manufacturing/Industrial Centers; and, (2) those businesses Citywide in aerospace; food, beverage and seafood; logistics, transportation and wholesale distribution; warehousing and manufacturing.

As part of its overarching economic development strategy, the City conducted a similar study of the Maritime Cluster. Several of the Maritime Cluster industries are also represented in the Basic Industries Cluster.

This study relied on two important resources: economic data and people representing the Basic Industries businesses who participated in an advisory task force and a comprehensive interview process to help describe activities and supply chain relationships within the Basic Industries Cluster. This study provides updated, Citywide data about employment in the Cluster and brings together multiple sources to describe revenue and sales, B&O, utility and other tax information about the Cluster. In addition, based on interviews with company representatives, the study presents location advantages and challenges perceived by Basic Industries companies doing business in Seattle.

- **Cluster Employment.** Citywide, Basic Industries jobs (including Construction, Manufacturing, Wholesale Trade, Communications and Utilities) totaled 121,700 in 2001, up from 114,700 in 1995 (a total increase of 6.1%, or 1.1% per year).

Jobs and companies in the City's Manufacturing/Industrial Centers increased from 66,600 in 1995 to 78,000 in 2001, a total increase of 17% (2.7% per year). In percentage terms, this growth rate matched the citywide employment changes from 428,000 in 1995 to 502,000 in 2001, a total increase of 17% (2.7% per year).

- **Wages.** Seattle Basic Industries jobs paid an average of \$50,900 in 2001, 12% more than similar jobs statewide (\$45,500) and 21% more than other jobs in Seattle (\$41,900) jobs. In Washington State, jobs in Basic Industries paid 38% more on average than other jobs.

Seattle Basic industries jobs wages increased from \$41,600 in 1995, expressed in 2001 dollars, representing annual growth of 3.4% per year. Statewide Basic Industries wages increased 2.0% per year, up from an average of \$40,300 in 1995, expressed in 2001 dollars.

- **Business Revenues.** Using employment percentages from 1995 and 2001 to allocate State revenue suggests revenues in Seattle's Basic Industries in 2001 were basically the same in total as in 1995, after adjusting for inflation. Gains in Construction and Resources and Manufacturing were offset by declines in Wholesale, Transportation, Communications & Utilities. In aggregate, Seattle's Basic Industries accounted for an estimated \$28.5 billion in revenue in 2001.

- **Tax Revenues.** In 2001, Basic Industries accounted for \$46.7 million, or 39% of the City's total retail sales tax revenue. Construction & Resources (or Contracting, per Department of Revenue nomenclature) has increasingly generated a larger share of the City's sales taxes, while Wholesaling has decreased in percentage terms of the City's sales tax revenues.

Seattle Basic Industries Cluster B&O taxes were estimated at \$38.0 million in 2001. Basic Industries companies are also major generators of utility taxes. In 2002, all companies in Seattle's Manufacturing/Industrial Centers combined to contribute \$15.1 million in taxes based only on electricity used. Of that total, \$13.2 million were generated by companies in the Basic Industries Cluster.

- **Location Factors.** Company representatives report that they benefit from their Seattle location for the following reasons:
  - Proximity to their customers, distributors and/or supplies;
  - Long-term, personal or firm relationship with Seattle;
  - Derived benefit of association with Seattle's brand image; or
  - Access to the waterborne, rail, truck and airborne freight shipping modes that converge in the City.

Transportation congestion and freight mobility detracts from the most frequently cited location advantage. Seattle business representatives expressed frustration with specific projects, congested areas, conflicting needs of pedestrian and freight mobility, and City traffic management.

The study found that companies related to manufacturing activities and industrial in nature fit into subsets, called subclusters. Nine subclusters ranked highest for study following a screening process that assessed total jobs, total number of firms, change in jobs from 1995 to 2001 and location quotients. The nine subclusters mapped and highlighted in this report are:

- Construction & Contracting
- Transportation & Wholesale Distribution
- Seafood Processing
- Food & Beverage
- Aerospace
- Industrial Machinery & Fabricated Metal
- Printing & Publishing
- Stone, Clay, Glass & Concrete Products
- Office & Home Furnishings

For each of these subclusters, interviews of companies representatives were used to map the many business linkages in the Seattle economy and beyond. Analytics for each subcluster's core activities include: employment in 1995 and 2001, wages, revenues, and concentration of activity in Seattle relative to the nation and State.

When interviewed about what the City could or should do to encourage growth within the industry in Seattle, businesses throughout the Basic Industries Cluster had similar suggestions. The overall theme reflects a perceived lack of appreciation for the industry and skepticism about the City's willingness to work in partnership with businesses in the Cluster.

In addition, businesses in the Cluster shared the following suggestions for the City:

- Fix transportation and improve freight mobility
- Streamline and improve predictability in permitting
- Be clear, consistent and firm with regulations and zoning
- Decrease variances
- Reaffirm land use for industrial areas
- Develop a retention strategy, particularly for small businesses
- Re-evaluate the tax structure and other costs to business, especially B&O taxes, vehicle licensing fees and utility costs
- Encourage use of local products.

While many issues are common among all of the Basic Industries subclusters, the industry outlook and local challenges vary from subcluster and from company to company. Innovation is one way many companies grow during changing economic times, and the innovation frequently leads to diversification and new markets, blurring the lines between companies traditionally considered "industrial" and the rest of Seattle's economy.



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## PURPOSE AND BACKGROUND: USING CLUSTER ANALYSIS TO UNDERSTAND THE ECONOMY

The City of Seattle's Office of Economic Development (OED) seeks to develop a unified, coordinated economic development strategy and plan that will help grow the City's economy. Towards this end, OED identified a group of industry clusters that have job growth potential; provide accessible, family wage jobs; fit with Seattle's comparative advantages and contribute significantly to the City's tax base. Analyses of each of the clusters will inform the development of OED's long-term strategic plan, as well as short-term action strategies.

This report addresses and presents analysis of the Basic Industries Cluster. This cluster was preliminarily identified as encompassing aerospace; food, beverage and seafood; logistics, transportation and wholesale distribution; warehousing; and manufacturing. A key outcome of this study is that companies related to manufacturing activities and industrial in nature fit into subsets, called *subclusters* in this study. Nine subclusters ranked highest in the analysis, and are therefore addressed in this study.

Analyzing regional and local economies in a cluster framework presents a unique way of thinking about economic development planning. Clusters refer to a relative, geographic concentration of businesses and organizations that together participate in a common, broader industry. Identifying and analyzing clusters provides a useful way to: (1) explain how many businesses depend, either directly or indirectly on common resources or activities; and (2) understand the breadth of economic activity associated with a cluster. In this way, thinking about the economy in terms of clusters can improve decision-makers' understanding of locally and regionally significant industries.

In addition to the analytical component, this study provides a summary of key issues and concerns facing businesses in Seattle's

Basic Industries Cluster. The issues and concerns cover topics unique to working in Seattle as well as more global industry-wide issues.

### Cluster Theory

OED chose clusters as a way to analyze Seattle's economy. In this way the City has shown an interest in understanding the breadth of economic activities connected to Basic Industries. Cluster theory provides a rich framework for analyzing the complexities of how businesses in Seattle relate to one another.

Cluster theory has roots dating back at least to the early 1800s and J.H. von Thünen. Alfred Weber followed much later (1929) with *The Theory of the Location of Industries*, in which he explored agglomeration trends and benefits within industries. At present, Michael Porter of the Harvard Business School's Institute for Strategy and Competitiveness leads cluster theory and its application to local and regional economic development.

Cluster analysis presents a more descriptive framework within economic base analysis, which includes a set of tools traditionally used by economists to evaluate regional economies. These tools have included:

- **Location quotients.** Location quotients express the relative concentration of jobs in a sector as a percentage of all jobs, compared to a larger reference area, such as the state or nation.
- **Shift-share analysis.** Shift-share allocates the change in jobs in the region to one of three causes: nationwide trends of all jobs, nationwide trends of the industry in question or local conditions distinctive to that industry.

- **Input-output analysis.** This analysis identifies the flow of resources (money) between sectors and identifies how change in one industry “multiply” to affect all industries in an economy.

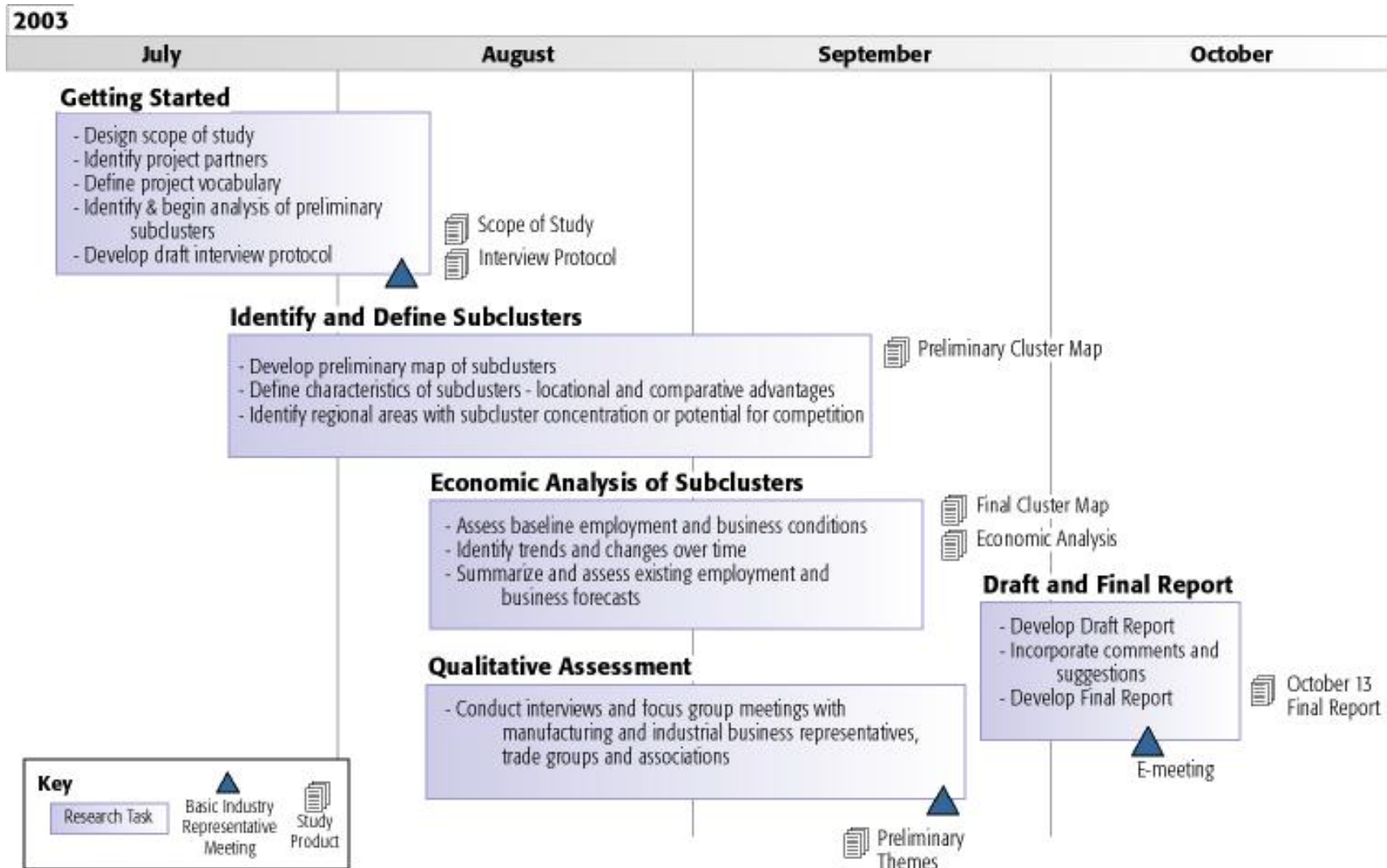
Economic base analytic tools work well within the cluster analysis framework, though data limitations typically prevent economic base techniques from accurately capturing the complexities of cluster relationships.

In this report employment and revenue data describe Seattle’s Basic Industries Cluster in aggregate and the core activities within the more prominent subclusters. Interviews of business representatives and industry stakeholders yielded well-informed subcluster maps (schematics) showing the linkages of businesses in Basic Industries to businesses not typically understood to be connected to Basic Industries. These maps provide a more robust picture, albeit a less quantified picture, of the Basic Industries Cluster than the aggregated output of input/output models.

## **Project Design**

A Task Force composed of key industry representatives that serve businesses in Seattle’s Basic Industries provided assistance in addressing public policy and planning issues. The Task Force reviewed interim products and provided guidance for the study, as shown in Exhibit 1. Task Force members were: Charlie Cuniff of the Environmental Coalition of South Seattle; Dave Gering of the Manufacturing Industrial Council; Mike Peringer of the SODO Business Association and Eugene Wasserman of the Neighborhood Business Council.

## Exhibit 1: Project Design and Schedule

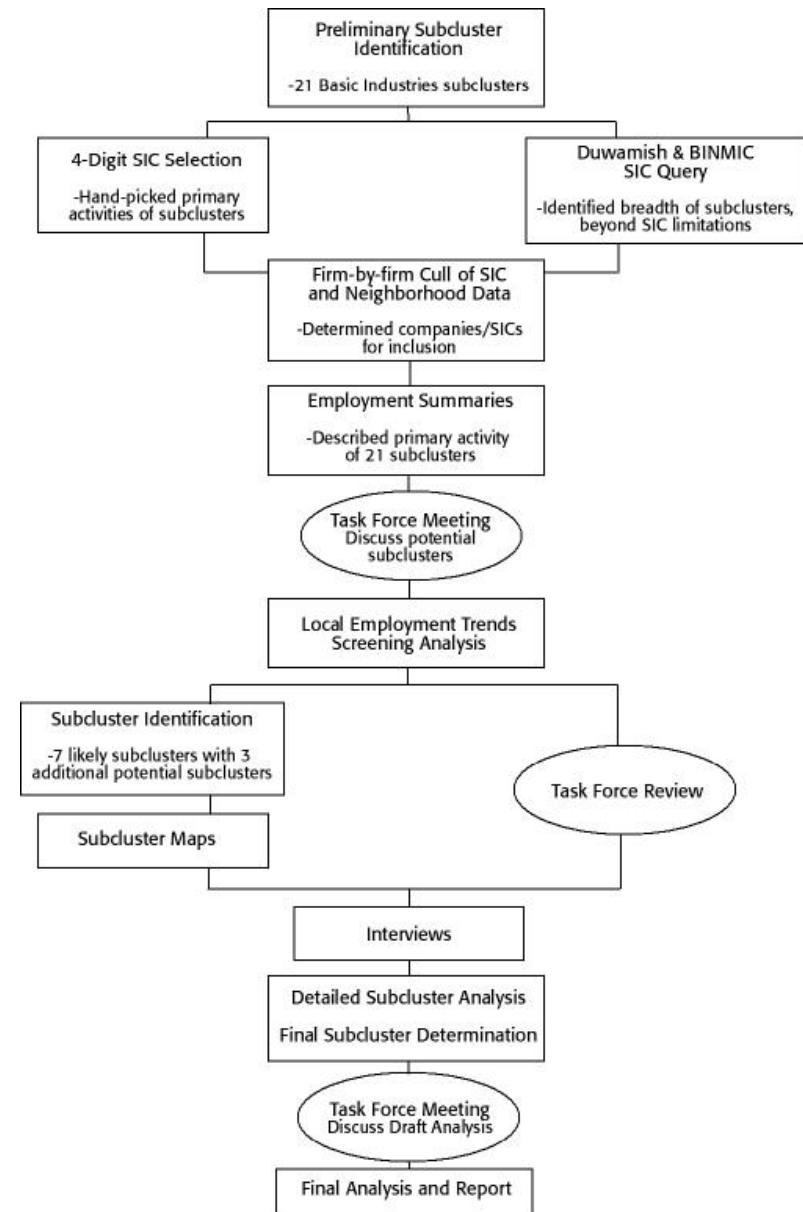


The study relied on two important resources: people representing Basic Industries businesses and economic data. Business and industry representatives helped describe activities within the cluster, identified prominent businesses and provided contact information for industry representatives whose expertise improved the understanding of the cluster. Data came from Washington State Department of Revenue, Washington State Employment Security Department, Puget Sound Regional Council and the City of Seattle.

An important step early on in the analysis was to focus the breadth of the study into subclusters for more detailed analysis, as shown in Exhibit 2. The screening process included analysis of total jobs, total number of firms, change in jobs from 1995 to 2001 and location quotients (described in greater detail in subsequent sections). Interim discussions with the Task Force and data analysis led to nine subclusters for study, discussed in greater detail below.

Interviews with 35 business and industry representatives (in addition to the four industry representatives serving on the Task Force) provided a thorough summary of local perceptions of economic issues concerning Seattle's Basic Industries today. The interviews also provided insight on key economic activities and their relationships to each other within the Basic Industries Cluster. A list of interviewees that assisted with this study appears in Appendix A.

## Exhibit 2: Subcluster Screening Methodology



## Project Study Period

This study captures historic trends in Basic Industries, a current snapshot of the state of the cluster and impressions and outlooks on the future of Basic Industries in Seattle, the region and world-wide. Quantitative analyses of employment data focus on the six years from March 1995 to March 2001, the two years furthest apart for which detailed employment data for Seattle were available at the time this analysis was completed.

At the outset of this study, stakeholders expressed concern that the analysis would reflect the current downturn in the national and local economies. The time frame of 1995 to 2001, however, captures a large portion of great economic expansion nationally and locally, as the recession did not begin until Spring 2001. Thus the analysis reflects strong regional economic growth and the way Basic Industries participated in that growth during this particular time frame.

## Data Sources and Limitations

Data provided by the State Department of Revenue and the Puget Sound Regional Council (PSRC) for this analysis reflect a key limitation regarding the use of standard industrial classifications (SICs). The U.S Bureau of Labor Statistics (BLS) developed SICs decades ago as a means to group businesses by primary activity. BLS updated this classification system in 2002, resulting in its new name, "The North American Industrial Classification System" (NAICS). NAICS changed the classification system from a four-digit to a six-digit hierarchy, providing greater specificity. BLS updated NAICS to reflect technological advances that have occurred, which has made some SICs outdated. Employment data available for this study included complete coverage (percentage of all data) of SICs, but not NAICS. For cluster analyses, however, the key issue is that both NAICS and SICs present similar limitations.

Employment data assigned to SICs (and NAICS) come with four key limitations:

- (1) Higher groupings of SICs (the one- or two-digit groupings) that might in general relate to a particular cluster include activities not included in a cluster or subcluster. For example, the 2-digit level summary of Printing & Publishing includes retail copy stores as well as commercial printers. Commercial printers serve clusters that retail copy stores do not serve. Getting past the 2-digit SIC level grouping is thus important to allocate activity by SIC to each cluster.
- (2) Within the most detailed SIC (four-digit level), a particular cluster may relate to only some of the businesses referenced by that SIC. In the printing example used above, within the four-digit SIC for commercial printing, some label printers serve food and beverage companies, while other commercial printers have nothing to do with food or beverage companies.
- (3) Each business in the employment data includes only one SIC, when in reality a business may engage in multiple activities included in multiple clusters. In some cases, the code "NEC" (Not Elsewhere Classified) is applied to multi-activity businesses. In the former case, for example, a manufacturer of sheet metal that uses some product to make office furniture and sells the rest to other businesses will likely receive a code for either office furniture manufacturing or sheet metal manufacturing.
- (4) Multiple sites of employment for one company might exist for multiple, clearly distinguishable activities. Combined with the limitation of only one SIC per company, SICs do not always accurately describe the nature of the activity of a particular employment site. For example, a warehouse owned and operated by a retailer might have a retail code assigned —

provided first that the warehouse is associated with a separate employment record.

**Addressing the Data Limitations.** With the help of PSRC, this study overcame the first limitation by regrouping four-digit SICs into activities and clusters, while excluding other four-digit SICs typically included in similar aggregations. Also, businesses were identified in SICs that may not have been included intuitively when examining the SIC label alone. In such a way, the SIC data were completely regrouped to more accurately represent cluster activity.

To the extent possible the study addressed or works within other limitations. The PSRC assisted with questioning four-digit SIC summaries, identifying companies treated inconsistently from 1995 to 2001, and removing companies or adjusting SIC summaries to reflect more consistent and accurate data.

## Definitions Used In This Study

### *Clusters*

Porter defines clusters as “geographic concentrations of interconnected companies, specialized suppliers, service providers, and associated institutions in a particular field that are present in a nation or region.”<sup>1</sup>

For the purposes of this study, the term cluster has been reserved specifically for the nine industry clusters the City has identified for their strategic planning: Basic Industries, Maritime, Biotech, Film, Music, Tourism, Information and Communications Technologies (ICT, formerly called High Tech), Health Care Services and Clean Energy.

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<sup>1</sup> The Institute’s Internet site, as posted October 14, 2003.  
<http://www.isc.hbs.edu/>

### ***Basic Industries Cluster***

Seattle OED advanced usage of the term “Basic Industries” for this cluster after working through other potential names, including “industrial” and “manufacturing.” OED also wanted the study to include the companies that locate in the City’s industrially zoned areas.

The term “basic” is a term from economic base analysis, an analytical framework in which the term “basic” refers to those industries that export products to markets outside of the region. This study includes wholesalers and construction companies, given their heavy concentration in the City’s industrial areas.

### ***Subclusters***

The Basic Industries Cluster was preliminarily identified as including aerospace, food and beverage (including seafood), transportation and distribution, warehousing and manufacturing. Manufacturing was considered too general, however, to apply cluster theory, therefore, at the outset of the study manufacturing was disaggregated into separable groups of industry, which were in turn screened for potential to analyze in a cluster framework

The screening process, revealed nine *subclusters* meriting further analysis as part of this study. Subclusters refer simply to the groups of economic activity within the Basic Industries Cluster, as defined by OED. The term clusters would ordinarily apply, but since OED has designated seven clusters as part of their strategy, using the term subclusters helps to differentiate the focus areas of this study from the clusters targeted by OED. Nine subclusters (subsets of the Basic Industries Cluster) emerged from the screening process on which this study focuses:

- Construction & Contracting
- Transportation & Wholesale Distribution
- Seafood Processing
- Food & Beverage
- Aerospace
- Industrial Machinery & Fabricated Metal
- Printing & Publishing
- Stone, Clay, Glass & Concrete Products
- Office & Home Furnishings

### **Activities**

Unique and separable business endeavors (called *activities* in this report) together compose a subcluster. Individual businesses might perform one or more activities, and participate in one or more cluster. This many-to-many relationship proves critical to understanding the complexity of relating the real world of business success to a cluster framework of economic analysis. Not all companies—relatively few, in fact—are neatly boxed within one cluster.

As industries cycle through peak and off-peak periods, companies that function as suppliers (as opposed to end product manufacturers that ship directly to retail) diversify their client base to sustain revenues. This diversification of clients frequently leads to cross-cluster activities. (Examples abound: electronics companies serving aerospace also serve maritime; plastic product makers serving furniture also serve apparel; cold storage serving seafood companies also serve agriculture.)

For this report, a hierarchy of activities adds structure to understanding the subclusters:

- **Core activities.** Clusters have *core activities* which largely explain the existence of the cluster. These activities drive the cluster and the cluster would not exist in their absence. Core activities typically reflect a region's comparative advantages.
- **Locally necessary activities.** Some activities exist as inseparable components of a cluster, and are thus *locally necessary*. Locally necessary activities may not drive the cluster's existence, but the existence of the core activity creates the need for these activities to be nearby. The same company that leads a core activity may also provide locally necessary activities.
- **Related activities.** Other activities participate in a cluster and benefit from the cluster's existence, but they do not work exclusively in this cluster. Businesses engaged in these activities typically cannot afford to deal exclusively in this cluster. They frequently innovate and diversify, serving other clusters as part of diversification.

### **Report Organization**

This report presents summary information about the entire Basic Industries Cluster in Seattle, followed by analysis of the nine subclusters identified above. Each subcluster section includes a summary of key issues and industry trends derived from interviews of industry representatives. *Subcluster maps* provide a schematic showing the relationships of activities within each subcluster. Data summaries for the Cluster as a whole and each subcluster include total jobs, firms, wages and fiscal revenue impacts to the City.

## SEATTLE'S BASIC INDUSTRIES CLUSTER

This study addresses a broad range of business types covering two dimensions: (1) those businesses Citywide related to manufacturing and the production of goods; and (2) the businesses located in the City's designated Manufacturing/Industrial Centers. These two definitions are not commensurate with each other, and thus present another complexity for evaluating Basic Industries as one cluster.

Citywide, Basic Industries jobs increased from 114,700 in 1995 to 121,700 in 2001, shown in Exhibit 3 (an increase of 7,000 jobs and 6%)<sup>2</sup>. Construction & Resources jobs grew by 5,500 jobs (31%), while manufacturing jobs changed very little (decreased by 450 jobs) and jobs in Wholesale, Transportation, Communications & Utilities (WTCU) increased by 1,800 (16%).

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<sup>2</sup> Throughout this report, jobs estimates reflect "covered employment," which refers to jobs covered by the State's unemployment insurance program. Covered employment serves as the most readily accessible and useful set of employment data for spatial analysis of current employment. This important data set is maintained by the Washington State Employment Security Department in cooperation with Puget Sound Regional Council and other government agencies throughout the State.

These data generally exclude proprietors and others not covered by State unemployment insurance programs, amounting to an exclusion of approximately 10 percent of all jobs. The data are subject to confidentiality agreements; the employment summaries have been suppressed according to those agreements. Finally, the Seattle jobs refer to March data for the respective years.

Exhibit 4 shows the number of jobs by sector located in the City's designated Manufacturing/Industrial Centers. In 2001, there were 78,000 covered jobs in these areas, up from 66,600 in 1995. The change and composition of these jobs are explored in greater detail in the following section.

**Exhibit 3:**  
**Seattle's Basic Industries Cluster Jobs, 1995 and 2001**

	1995	2001	Change	% Change
Manufacturing/Industrial Centers				
Const & Resources	4,700	7,500	2,800	60%
Manufacturing	17,800	21,800	4,000	22%
WTCU	25,100	23,600	-1,500	-6%
Total	47,600	52,900	5,300	11%
Remainder of City				
Const & Resources	12,900	15,700	2,800	22%
Manufacturing	21,900	17,500	-4,400	-20%
WTCU	32,300	35,600	3,300	10%
Total	67,100	68,800	1,700	3%
Citywide				
Const & Resources	17,600	23,200	5,600	32%
Manufacturing	39,700	39,300	-400	-1%
WTCU	57,400	59,200	1,800	3%
Total	114,700	121,700	7,000	6%

Source: Washington State Employment Security; Puget Sound Regional Council;

Note: WTCU represents Wholesale, Transportation, Communication and Utilities



**Exhibit 4:**  
**All Jobs Located in Seattle's Industrial Centers,**  
**1995 and 2001**

	1995	2001	Change	% Change
Const & Resources	4,700	7,500	2,800	60%
Manufacturing	17,800	21,800	4,000	22%
WTCU	25,100	23,600	-1,500	-6%
Retail	4,600	8,200	3,600	78%
Services	7,300	10,900	3,600	49%
Government	7,100	6,000	-1,100	-15%
Total	66,600	78,000	11,400	17%

Source: Washington State Employment Security; Puget Sound Regional Council.

Note: WTCU represents Wholesale, Transportation, Communication and Utilities

### Total Cluster Activity Levels

The corollary to analyzing employment in industrial areas is analyzing the Citywide distribution of Basic Industries employment. As mentioned above, the City preliminarily identified Basic Industries encompassing aerospace; food, beverage and seafood; logistics, transportation and wholesale distribution; warehousing; and manufacturing. The City's desire to understand employment in the Duwamish and BINMIC areas led to expanding this definition to include construction and resource employment as well.

At this level of analysis, the broad industry groupings published by the Puget Sound Regional Council provide a useful aggregation of jobs. Exhibit 5 presents a summary of covered employment in Seattle's Basic Industries for 2001, by five geographic regions; the City of Seattle; King County; the three-County region comprising King, Pierce and Snohomish Counties; the State of Washington and the United States totals. The exhibit shows relative

distribution of Basic Industries jobs within each economy. As shown, Seattle ranks lower than each of the larger economies in terms of percentage of jobs allocated to Basic Industries.

*Location quotients* are a useful analytical tool to describe how concentrations of jobs in one area compare to a larger, encompassing reference area. They are calculated by dividing the jobs of a sector as a percentage of the whole economy by the same percentage for the reference area. Values greater than 1.0 show the Seattle economy is more concentrated in a particular sector than the reference area; values less than one show the Seattle economy is less concentrated in the sector.<sup>3</sup>

As shown in Exhibit 6, in Seattle, jobs in Wholesale Trade, Transportation, Communication & Utilities represent a greater percentage of total jobs than for Washington State and the nation (location quotients of 1.1).

In most other cases, the Seattle economy is less concentrated than the reference areas, with location quotients less than 1.0. Manufacturing jobs are the least represented in Seattle's economy, with location quotients of 0.6 compared to all other larger economies. This is not consistent within the many subsets of Manufacturing. As discussed in greater detail below, several subclusters within Manufacturing have location quotients greater than 1.0. The following sections provide detail within these broad sectors, showing in particular the concentration of transportation-related jobs in Seattle.

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<sup>3</sup> Location quotients for aerospace for Seattle versus Washington State are calculated as follows: (Seattle aerospace jobs / Seattle total jobs) / (Washington State aerospace jobs / Washington State total jobs).

**Exhibit 5:**  
**Seattle Basic Industries Covered Employment, 2001**

<b>Jurisdiction</b>	<b>Construction &amp; Resources</b>	<b>Manufacturing</b>	<b>Wholesale Trade, Transportation, Communication &amp; Utilities</b>	<b>Basic Industries Total</b>	<b>Total Covered Employment</b>
Seattle	23,153	39,262	59,160	121,575	502,400
King County	69,759	142,209	157,240	369,208	1,155,500
Three-County Region*	105,435	217,380	191,284	514,099	1,603,642
Washington State	151,400	333,300	279,123	763,818	2,689,366
U.S. (000s)	7,253	17,695	13,842	38,790	131,925
<b>Percentage of Total Employment</b>					
	<b>Construction &amp; Resources</b>	<b>Manufacturing</b>	<b>Wholesale Trade, Transportation, Communication &amp; Utilities</b>	<b>Basic Industries Total</b>	
Seattle	5%	8%	12%	25%	
King County	6%	12%	14%	32%	
Three-County Region*	7%	14%	12%	33%	
Washington State	6%	12%	10%	28%	
U.S.	5%	13%	10%	28%	

Source: Puget Sound Regional Council, Washington State Employment Security; \*Three County region encompasses King, Pierce and Snohomish Counties.

**Exhibit 6:  
Seattle Basic Industries Location Quotients  
with Varying Reference Areas, 2001**

<b>Seattle Location Quotient Reference Areas</b>	<b>Construction &amp; Resources</b>	<b>Manufacturing</b>	<b>Wholesale Trade, Transportation, Communication &amp; Utilities</b>	<b>Basic Industries Total</b>
King County	0.8	0.6	0.9	0.8
Three-County Region*	0.7	0.6	1.0	0.8
Washington State	0.8	0.6	1.1	0.9
U.S.	0.8	0.6	1.1	0.8

Source: Puget Sound Regional Council; Washington State Employment Security Department

\*Three County region encompasses King, Pierce and Snohomish Counties.

### ***Wages***

Policy makers and land-use planners frequently point to jobs in Basic Industries as providing “family wages” or make other references to such jobs as providing wages that are relatively higher than other types of jobs. As Exhibit 7 shows, Seattle Basic Industries jobs paid an average of \$50,900 in 2001, 12% more than similar jobs statewide (\$45,500) and 21% more than other jobs in Seattle (\$41,900) jobs. In Washington State, jobs in Basic Industries paid 38% more on average than other jobs.

Seattle Basic industries jobs wages increased from \$41,600 in 1995, expressed in 2001 dollars, representing annual growth of 3.4% per year. Statewide Basic Industries wages increased 2.0% per year, up from an average of \$40,300 in 1995, expressed in 2001 dollars.

Wages for all jobs during this time period grew relative to inflation, reflecting economic expansion. Wages for Basic Industries jobs grew at a relatively slower rate than other sectors, both in Seattle

and statewide. However, Basic Industries wages grew more rapidly in Seattle than statewide.

### ***Revenues***

State revenue totals for Basic Industries facilitate estimates of Seattle Basic Industry revenues, using employment at the State and City to allocate Statewide revenues. (Detailed revenue data for Seattle’s Basic Industries were not available for this study.)

Washington State Department of Revenues provided gross revenue data for the State for 1995 and 2001 by SIC. Employment serves as a driver to allocate revenues from State totals to Seattle totals. For example, the City’s Basic Industries jobs represent 14% of the State’s Basic Industries jobs (121,575 jobs in Seattle out of 763,818 in the State, as shown above in Exhibit 5). Similarly, Seattle is home to 10% of Construction, 12% of Manufacturing and 21% of the Wholesale and Transportation jobs.

Using employment percentages from 1995 and 2001 to allocate State revenue and adjusting for inflation suggests revenues in

Seattle's Basic Industries 2001 were basically the same in total as in 1995, as shown in Exhibit 8. Gains in Construction & Resources and Manufacturing were offset by declines in Wholesale,

Transportation, Communications & Utilities. In total, Seattle's Basic Industries accounted for an estimated \$28.5 billion in revenue in 2001.

**Exhibit 7:  
Average Wages for Basic Industries Jobs  
in Seattle and Washington State, 1995 and 2001**

Cluster	Seattle			Washington State		
	1995*	2001	A.A.G.R.	1995*	2001	A.A.G.R.
Basic Industries	\$41,600	\$50,900	3.4%	\$40,300	\$45,500	2.0%
Other Sectors, excluding Government	\$27,500	\$41,900	5.2%	\$25,300	\$33,100	4.6%

\*Adjusted for inflation and expressed in 2001 dollars, using the Gross Domestic Product Implicit Price Deflator for Personal Consumption Expenditures.

A.A.G.R. is Average Annual Growth Rate (adjusted for inflation)

Source: Puget Sound Regional Council; Washington State Employment Security Department

**Exhibit 8:  
Washington State and Seattle Basic Industries Revenues, 1995 and 2001 (\$2001, millions)**

	1995		2001	
	Washington State	Seattle	Washington State	Seattle
Construction & Resources	\$23,197	\$2,987	\$31,056	\$3,626
Manufacturing	\$64,283	\$5,952	\$89,176	\$7,024
WTCU	\$103,876	\$19,775	\$106,207	\$17,880
Total	\$191,357	\$28,713	\$226,439	\$28,529

Source: Washington State Department of Revenue, Washington State Employment Security Department, Puget Sound Regional Council, U.S. Bureau of Economic Analysis

Note: Data adjusted for inflation

## Tax Revenues

Companies in Basic Industries, as with all businesses in Washington, pay four primary taxes: sales tax, business and occupations tax (B&O), utilities tax and property tax.

## Sales Tax

In 2001, Basic Industries accounted for \$46.7 million, or 39% of the City's total retail sales tax revenue, shown in Exhibit 9. Sales tax revenues are up from \$32.1 in 1995 (in 2001 dollars), then representing 37% of the City total. Sales tax estimates were derived from the City's taxable retail sales by SIC, multiplied by the City's portion of the sales tax: 0.85% of taxable retail sales.

**Exhibit 9:  
City of Seattle Sales Tax Revenue by Sector, 2001**

Sector	Reporting Businesses	% of Total	Sales Taxes Paid (millions)	% of Total
Const. & Resources	7,934	23%	\$22.323	18%
Manufacturing	1,497	4%	\$3.461	3%
Transp., Comm, Utilities	692	2%	\$8.552	7%
Wholesale Trade	3,472	10%	\$12.364	10%
<b>Industrial Users</b>	<b>13,595</b>	<b>40%</b>	<b>\$46.699</b>	<b>39%</b>
Retail Trade	9,818	29%	\$46.847	39%
Finance, Ins., Real Estate	459	1%	\$2.261	2%
Services	8,557	25%	\$23.277	19%
Unclassified	1,361	4%	\$2.037	2%
<b>Non-Industrial and Unclassified Users</b>	<b>20,195</b>	<b>60%</b>	<b>\$74.421</b>	<b>61%</b>
<b>Total</b>	<b>33,790</b>	<b>100%</b>	<b>\$121.120</b>	<b>100%</b>

Source: City of Seattle, Washington State Department of Revenue

Construction & Resources has increasingly generated a substantially larger share of the City's sales taxes, up to 18% in 2001 (\$22.3 million) from 12% in 1995 (\$10.5 million, adjusted for inflation). Sales tax related to Contracting, however, accrues at the point of construction *not* at the business office location. Therefore, there is not a direct correlation of Contracting jobs in the City to contracting sales tax.

After adjusting for inflation Wholesaling sales taxes increased during this period to \$12.3 million in 2001, down from \$12.0 million in 1995 (expressed in 2001 dollars). The local share of Wholesaling dollars in 1995 accounted for 14% of the City's sales tax, down from 10% in 2001.

## B&O Tax

As shown in Exhibit 10, Basic Industries paid Seattle B&O taxes totaling \$38.037 million in 2001, down slightly from 1995 (\$30,232, expressed in 2001 dollars). Manufacturing B&O taxes declined slightly (2% decline), while other Basic Industries taxes grew (111% for Construction & Resources; 16% for WTCU).

**Exhibit 10:  
Estimated Seattle B&O Taxes Paid by  
Basic Industries, 1995 and 2001 (\$2001, millions)**

	1995	2001
Construction & Resources	\$4.686	\$9.900
Manufacturing	\$8.689	\$8.518
WTCU	\$16.857	\$19.620
<b>Total</b>	<b>\$30.232</b>	<b>\$38.037</b>

Source: Washington State Department of Revenue, Washington State Employment Security Department, Puget Sound Regional Council

Note: Data adjusted for inflation

## Utilities Tax

Basic Industries companies are major generators of utility taxes. The City received \$15 million in tax revenue from electricity usage in 2002 by businesses in the Duwamish and Ballard Industrial Centers combined, shown in Exhibit 11 (Seattle City Light). Industrial users account for 87% of those tax revenues.

The number of premises shown in Exhibit 11 reveals that industrial users compose only 45% of City Light user premises (premises might include multiple hook-ups, and a single company might include multiple premises) in the areas and 87% of utility taxes generated by electricity. Compared to non-industrial users in the industrial centers, the average industrial user generates 8.5 times as many electricity taxes; for all of City Light's customers, the ratio is 3.6 to 1.

**Exhibit 11:  
Estimated Electricity Taxes Paid by  
Duwamish and Ballard Industrial Centers , 2002  
(\$2002, millions)**

<b>Sector</b>	<b>Premises</b>	<b>% of Total</b>	<b>Utility Taxes Paid (millions)</b>	<b>% of Total</b>
Const. & Resources	149	6%	\$0.136	1%
Manufacturing	337	14%	\$10.313	68%
Transp., Comm, Utilities	364	15%	\$1.206	8%
Wholesale Trade	207	9%	\$1.570	10%
<b>Industrial Users</b>	<b>1,057</b>	<b>45%</b>	<b>\$13.225</b>	<b>87%</b>
Retail Trade	264	11%	\$0.185	1%
Finance, Ins., Real Estate	488	21%	\$1.065	7%
Services	206	9%	\$0.307	2%
Unclassified	353	15%	\$0.365	2%
<b>Non-Industrial and Unclassified Users</b>	<b>1,311</b>	<b>55%</b>	<b>\$1.922</b>	<b>13%</b>
<b>Total</b>	<b>2,368</b>	<b>100%</b>	<b>\$15.148</b>	<b>100%</b>

Source: Seattle City Light

Overall, the City of Seattle received \$34 million in taxes from electricity usage in 2002, including from Basic Industries companies located outside of the City's industrial areas. The Ballard and Duwamish areas account for 45% of the total electricity taxes paid; industrial uses only in the industrial centers account for 39% of the City's total.

Water, sewer, garbage and storm drainage utilities are taxed as well. The City collected an additional \$32.5 million from all industries and residential users in 2002. (Revenues from these sources were not available in greater detail).

## Other Taxes

Businesses in Seattle pay property taxes that go to the City as well. Property tax revenues are determined by assessed values of land and improvements, including buildings and equipment. Limitations imposed by I-747 complicate the relationships between property taxes, assessed values and City policies. Basic Industries play an integral role in the City's commercially related property tax base.

## Seattle's Manufacturing/Industrial Centers: Duwamish and BINMIC

Seattle's industrial zoning overlay district, Manufacturing/Industrial Centers, refers to the Duwamish Industrial Area, including SODO, and the Ballard-Interbay-Northend Manufacturing Industrial Center (BINMIC).

In 2001, covered employment in the City's two industrial areas combined to total 78,000 in Exhibit 12 jobs. As the Exhibit shows, from 1995 to 2001, covered employment grew from 13,700 to 15,000 in the BINMIC area, a 9.5% increase. Exhibit 3 shows the

variety of businesses and jobs located in these two areas, and the changes in covered employment from 1995 to 2001.

In 2001, 21,800 of the jobs in the two manufacturing and industrial centers are in manufacturing, up from 17,800 in 1995 and nearly one-third of the total for each year. The other sectors typically located in industrially zoned lands (construction and resources; transportation, communication and utilities (TCU); wholesale trade) combine to add another 31,100 jobs in 2001, up from 29,800 in 1995. All industrial-sector jobs combine to 52,900 jobs in 2001 and 47,600 in 1995. In percentage terms, jobs in these sector represented 69% of all jobs in the Manufacturing/Industrial Centers in 2001, down slightly from 72% in 1995.

The change in jobs in these areas from 1995 to 2001 show that on net, the jobs coming into the areas have been more non-industrial in nature than industrial. Of the 10,700 net gain in jobs between 1995 and 2001, exactly half (50%) were non-industrial. A major contributor to those non-industrial jobs is Starbucks.

**Exhibit 12:**  
**Covered Employment BINMIC and Duwamish Industrial Areas, 1995 & 2001**

	BINMIC			Duwamish			Total		
	1995	2001	% Change	1995	2001	% Change	1995	2001	% Change
Construction and Resources	1,100	1,800	64%	3,600	5,700	58%	4,700	7,500	60%
Manufacturing Total	6,000	6,200	3%	11,800	15,600	32%	17,800	21,800	22%
Transportation, Communication and Utilities (TCU)	1,400	1,300	-7%	8,800	8,900	1%	10,200	10,200	0%
Wholesale Trade Total	2,000	1,300	-35%	12,900	12,100	-6%	14,900	13,400	-10%
Retail Trade Total	700	1,100	57%	3,900	7,100	82%	4,600	8,200	78%
Finance, Insurance, Real Estate (FIRE)	100	200	100%	600	1,300	117%	700	1,500	114%
Services	2,200	2,800	27%	4,400	6,600	50%	6,600	9,400	42%
Government	200	300	50%	6,900	5,700	-17%	7,100	6,000	-15%
<b>Total Covered Employment</b>	<b>13,700</b>	<b>15,000</b>	<b>9%</b>	<b>52,900</b>	<b>63,000</b>	<b>19%</b>	<b>66,600</b>	<b>78,000</b>	<b>17%</b>

Source: Puget Sound Regional Council, Washington State Employment Security; Note: '\*' indicate data suppressed according to ESD confidentiality agreement.

The data show that while industrial SICs do compose the majority of jobs in industrial areas, it is also true that companies with SICs not typically thought of as 'industrial' locate there as well. The remainder of this report presents the case that in many instances this cohabitation is intentional, as companies with service and other SICs locate in these areas to serve industrial companies.

These results reveal other findings important for understanding additional analysis:

- It is important to understand these findings in their proper context. Employment codes (SICs) are not land use codes, and the analysis does not speak to the percentage of jobs in industrial areas that meet land use code objectives. Further, SIC limitations prevent a full understanding of the types of companies located in these areas. A company with a manufacturing code, for example, may have no manufacturing activity at all at that location; their presence may be in the form of offices or even retail (a boat manufacturer with a sales room could be one such example).

## **Key Issues for all Basic Industries in Seattle**

Companies in each subcluster within Seattle's Basic Industries face some issues unique to their subcluster. Several issues however, appear to generally affect all companies in the Basic Industries cluster. The following discussion of the key issues affecting businesses highlights areas common to all subclusters.

### ***Transportation Congestion and Freight Mobility***

The issue most important to Seattle's Basic Industries is transportation — moving commodities and equipment into, out of and within Seattle. All of Seattle's Basic Industries benefit from locating in the City for one of two reasons: (1) their customers,

their distributors and/or their suppliers are in Seattle; and/or (2) they ship products out of Seattle via the many shipping modes that converge in the City. Traffic congestion takes away this location advantage and leads some companies to evaluate other less congested places to do business.

Congestion also has the effect of slowing employee movement to and from work, as well as on the job. As an example of how serious this issue can be, some companies have devoted staff to this aspect of their business.

Seattle business representatives express frustration with specific projects (implemented and proposed) and City traffic management. They fear construction related to the Alaskan Way Viaduct and related traffic displacement will further deter freight mobility. They perceive road projects and planning to be uncoordinated, causing congestion to worsen.

Stadium traffic, especially during daytime events, increases congestion in the SODO area. Local businesses anticipate conflicts with the Monorail, other big construction projects and added higher density housing and office uses.

Business representatives report that pedestrian needs and trucking needs can be mutually exclusive, citing recent decisions related to the Burke-Gilman Trail extension in Ballard as an example of how pedestrian and bicycling activity disrupts moving heavy vehicles. Curb cuts and traffic calming measures were brought up as other examples of projects that serve pedestrians but can negatively affect businesses.

### ***Health of Customers in Respective Markets***

Companies competing in international markets face global economic influences, including trade shifts and prices of commodities, inputs or supplies as key issues. This is particularly



evident to Aerospace, Industrial Machine & Fabricated Metal and Transportation & Freight Distribution companies involved with international movement of goods.

Businesses engaged primarily in local or regional markets cite the local economy and business climate as key factors affecting their business. This is particularly true for the Printing & Publishing subcluster businesses. Printing & Publishing companies have been affected by delays or reductions in customer purchases and inventory-on-demand, related to their clients' heightened concerns of cash flows. This was also true in the Food & Beverage subcluster.

### ***Growing Costs to Businesses***

Basic Industries companies typically have many different production inputs that can independently and collectively increase costs during various business cycles. Land costs, utility rates and the prices of raw materials can each fluctuate independently.

Companies locating in Seattle pay high land prices and facility costs relative to elsewhere in the region. In Fall 2003, the cost of Seattle distribution warehouse leases averaged \$7.00 to \$8.00 per square foot per year, versus \$5.00 to \$6.00 elsewhere in the region (Kent Valley and Sumner combined).<sup>4</sup> Interviewees frequently cited zoning and encroaching commercial or residential uses as factors increasing land and facility costs in Seattle.

B&O tax is an additional cost Seattle companies pay. Companies with local primary competition or customer base often cited the higher B&O tax as a reason to leave Seattle. Few cities in the region charge a local B&O tax for manufacturing and wholesale

<sup>4</sup> Cushman and Wakefield (2003); Grubb & Ellis (2003).

activities, and Seattle's tax ranks highest among larger cities that assess this tax. In 2003, Seattle taxed manufacturing and wholesale revenues at a rate of \$2.15 for every \$1,000 in taxable revenue (Exhibit 13). Other cities that businesses cite as viable locations show lower B&O tax rates (\$1.10 in Tacoma, for example). Cities that do not charge B&O taxes include Kent, Renton, Sumner and Tukwila.

### **Exhibit 13: B&O Tax Rates for Selected Cities, 2002**

<b>City</b>	<b>B&amp;O Tax</b>
Seattle	\$2.15
Bellingham	\$1.70
Bremerton	\$1.60
Bellevue	\$1.50
Tacoma	\$1.10
DuPont	\$1.00
Everett	\$1.00
Longview	\$1.00
Olympia	\$1.00

\*Rates shown are per \$1,000 of taxable revenue. These rates apply to manufacturing and wholesale activities only; other rates apply to other sectors.

Source: Municipal Research & Services Center, 2003

Seattle companies view the permitting process as cumbersome and not timely, which translates to real costs for businesses. In some cases, older Seattle businesses perceive the process as worse than in years past. Some of the older companies suggest that costs rarely required in the past are now commonplace, such

as hiring architects and engineers to submit permits requiring more project details.

Rising utility costs, including fuel, electricity and water, all require Basic Industries to find new ways to cut costs. Utility prices are beyond companies' influence, unlike the bargaining power some may exercise for other key inputs. For companies that cannot cut back on utility usage, other costs become even more important. In this way, rising utility costs can indirectly push companies out of areas that come with high operating costs such as those discussed above.

Other factors that are broadly affecting Basic Industries companies include: regulatory requirements imposed by the State's Department of Labor and Industries, particularly regarding ergonomics; the impact of environmental and other regulations, and increasing health care and insurance costs.

### ***Diversification Strategies***

A common theme in the operations of companies in Basic Industries companies is the ability and need to diversify products, services and lines of business, including cross-over into other industries and subclusters. The histories of many companies trace back to the core industries that grew Seattle: timber, maritime and aerospace. As competition increased and those core industries experienced cyclical downturns, Seattle's Basic Industries companies survived by reaching out to other industries and geographic markets. This trend continues today, driven by market complexities far beyond the cycles of the original core industries.

In Printing & Publication, for example, several local commercial printers now focus on promotional products. Another printer has branched out into wine labels. Cold storage companies choose to mitigate risk by serving various food industries that operate on

independent cycles. Electronics companies that began with a sole client (Boeing) continue to rely on Boeing as a key client, but also serve maritime industries, factory machinery and other industries.

### **Seattle Location Factors for Basic Industries**

Seattle's Basic Industries have historically located in the City for one of two reasons: (1) to serve Seattle-based clients in aerospace, maritime industries and/or the downtown service sector; and/or (2) to work among the convergence of freight modes, including waterborne freight, rail, trucks and airborne freight. Some of Seattle's companies have diversified since originally locating in Seattle; such companies no longer need the Seattle location. Other companies find their Seattle location critical to all operations of their business.

Nearly all companies that participated in interviews for this study expressed a desire to remain in Seattle. Demand for industrial land in Seattle is high, as demonstrated by industrial vacancy rates. Seattle vacancy rates are very low in the third quarter of 2003: 3.19%; vacancy rates to the south in the Kent Valley are much higher: 12.04%.<sup>5</sup>

Many factors attract Basic Industries to Seattle. Companies interviewed for this study presented a wide range of locational advantages for Seattle. The reasons given for Seattle locations include:

- Long-term, personal or firm relationship with Seattle and local customers or suppliers;
- Primarily local competition, local or regional supply chain;

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<sup>5</sup> Colliers International Industrial Market Reports for "Seattle Close-In" and "Kent Valley," 3<sup>rd</sup> Quarter 2003

- Access to barge traffic, freeways, railroads, one major and one regional airport, and shipping terminals;
- Critical mass of companies or linkages;
- Centrality to customer base and manpower;
- Benefits of association with Seattle's brand image (stemming from Starbucks, Boeing and others); and
- Industry support services based in Seattle.

For a few companies, Seattle no longer offers any location advantage, but other factors prevent them from moving. High moving costs, associated with moving heavy machinery, for example, offset the lower operating costs of other locations. In the current slower economy, moving costs present a relatively larger barrier. When business picks up again for these businesses, they might find the timing right to absorb moving costs and move to those places that come with lower operating costs.

As Seattle's companies evaluate the benefits of remaining in Seattle, they examine any erosion of the location advantages that originally brought them to Seattle. Such erosion commonly comes from one of several reasons:

- Primarily international competition, supply chain or customer base;
- Maximized market share in Seattle, deterring expansion within Seattle;
- Companies' facilities in other cities offer better expansion potential;
- Critical mass of companies or linkages is eroding;
- Business changes require different needs from space; desired space not available in City; or
- Increasing land or facility costs; renters cannot afford to stay in lease; owners see opportunity in selling.

## Basic Industry Cluster Strategies

The key message for applying cluster theory to economic development strategies is that such strategies must be crafted in a way that is mindful of all activities in a cluster, and how the activities support the cluster as a whole. Not all activities in every cluster necessarily merit development of activity-specific strategies. However, support for any activity will likely benefit the cluster as a whole.

When interviewed about what the City could or should do to encourage growth within the industry in Seattle, businesses throughout the Basic Industries Cluster had similar suggestions. The overall theme reflects a perceived lack of appreciation for the industry and skepticism about the City's willingness to work in partnership with businesses in the Cluster. In addition, businesses in the Cluster shared the following suggestions for the City:

- Fix transportation and improve freight mobility, including completing the Spokane Street Project, and the SR-509 connection to I-5, focus on improved access to the Port of Seattle's terminals, and manage the Viaduct impacts.
- Streamline and improve predictability in permitting.
- Be clear, consistent and firm with regulations and zoning; decrease variances.
- Reaffirm land use for industrial areas.
- Develop a retention strategy; particularly for small businesses.
- Re-evaluate the tax structure and other costs to business, especially B&O taxes, vehicle licensing fees and utility costs.
- Encourage use of local products, if possible.

## BASIC INDUSTRIES SUBCLUSTERS

The study began with some subclusters preliminarily identified aerospace; food, beverage and seafood; logistics, transportation and wholesale distribution; warehousing; and manufacturing. In viewing the analysis in a cluster framework, however, examining all manufacturing appeared to need better definition. The Task Force helped identify concentrations of employment in Seattle meriting study as subclusters.

Exhibit 14 shows criteria used to determine which subclusters within Basic Industries ranked highest for detailed study along with the findings of the screening process and final rankings. As discussed previously, our study disaggregates the Basic Industries Cluster into nine subclusters:

- Construction & Contracting
- Transportation & Wholesale Distribution
- Printing & Publishing
- Aerospace
- Seafood Processing
- Food & Beverage
- Industrial Machinery & Fabricated Metal
- Stone, Clay, Glass & Concrete Products
- Office & Home Furnishings

Two potential subclusters are among the City's designated Clusters for detailed study: Biotech (Chemicals and Allied Products) and Maritime (Other Transportation). Therefore, though their criteria would otherwise have ranked them high, those industries were not analyzed for this study.

In addition, early in the analysis a detailed shift-share analysis helped to screen subclusters to determine which subclusters had changed from 1995 to 2001 differently than expected given

national and State trends. The general findings are summarized in Exhibit 14.

Each subcluster was evaluated to determine the subcluster Core Activities, Locally Necessary and Related Activities. As shown in Exhibit 15, jobs in each of the Core Activities provides a sense of the employment base of each subcluster.

## Exhibit 14: Basic Industries Subclusters Screening Summary

	OVERALL RANK	Number of Seattle Jobs (2001)	Shift-share Analysis Local Factors	Change from 1995 - 2001	Number of Firms	Notes; Exploration Areas
<b>Designated for Subcluster Analysis</b>						
<b>Aerospace</b>	●	●	●	●	●	Boeing relations expected to overwhelm this subcluster; spinoff industries are of interest
<b>Food &amp; Beverage</b>	●	●	●	●	●	Possibly split into separate clusters for Food and for Beverage
<b>Transportation / Distribution</b>	●	●	●	●	●	Other subclusters may absorb this; Initial focus on "generic" distribution companies not serving
<b>Seafood</b>	●	●	●	●	●	Maritime overlaps exist; Will work with OED Staff and other consultants to avoid duplicative efforts
<b>Fabricated Metal &amp; Sheet Metal</b>	●	●	●	●	●	
<b>Printing &amp; Publishing</b>	●	●	●	●	●	Large employers include newspapers and lithography; lots of "copy shops" to be "weeded out"
<b>Stone, Clay, Glass &amp; Concrete Products</b>	●	●	●	●	●	Glass manufacturing is of interest; possible connections of Stone manufacturers to others
<b>Industrial Machinery</b>	●	●	●	●	●	Many jobs are in Food Products Machinery, to be included in Food & Beverage subcluster
<b>Office &amp; Home Furnishings</b>	●	○	●	●	●	Jobs data do not reveal perceived business activity associated with installations
<b>Other SIC Groups</b>						
Other Transportation	●	●	●	●	●	Most jobs in this group are in shipbuilding and covered by Maritime Cluster Study
Chemicals & Allied Products	●	●	●	●	●	Biotech Cluster overlaps dominate this sector; ranks lower by excluding biotech companies
Electronic Equipment	●	●	○	●	●	Two or three companies dominate and believed to serve aerospace primarily
Miscellaneous Manufacturing	●	●	●	●	●	Sporting and athletic goods manufacturers are of interest in this group
Textiles & Apparel	●	●	●	●	●	Interesting companies merit consideration under a potential outdoor recreation cluster
Primary Metal Industries	●	●	●	●	●	
Rubber & Misc. Plastics	●	●	●	●	○	
Instruments & Related Products	●	○	●	●	●	Includes jobs in "Measurement and Control"; believed to be serving maritime and aerospace
Lumber & Wood Products	●	○	●	●	●	
Warehousing	●	●	○	○	●	Refrigeration storage captured in Food & Beverage and Seafood subclusters
Leather & Leather Products	○	○	○	○	○	
Paper & Allied Products	○	○	○	○	○	
Petroleum Refining & Related Industries	○	○	○	○	○	

### Symbol Key

Values				
Symbol	Number of Seattle Jobs	1995-2001 Shift-share Analysis Local Factor Absolute Values	Change in Jobs, 1995 to 2001 (either direction)	Number of Firms
●	5,000 or more	More than 2,000	1,000 or more	200 or more
●	2,001 – 5,000	1,000 – 2,000	501 - 1,000	71 – 125
●	1,001 – 2,000	500 – 1,000	251 – 500	41 – 70
●	501 – 1,000	250 – 500	101 – 250	21 – 40
○	500 or less	250 or less	100 or less	20 or less

Source: Washington State Employment Security Department; Puget Sound Regional Council; U.S. Bureau of Labor Statistics

**Exhibit 15:**  
**2001 Seattle Employment in Subcluster Core Activities**

<b>Subcluster</b>	<b>Jobs</b>
Contractors	16,060
Transportation	11,208
Printing & Publishing	6,487
Seafood	6,120
Food & Beverage	5,905
Aerospace	5,781
Fabricated Metal	4,471
Stone Clay & Glass	1,619
Furniture	1,476
All Subclusters	59,127

Source: Washington State Employment  
Security Department, Puget Sound  
Regional Council

These analytical elements are presented for each of the subclusters. Quantitative descriptions of the subclusters focus on jobs associated with core activities, because core activities are unique to each subcluster. SICs for Locally Necessary and Related activities frequently appear in more than one subcluster. Disaggregating jobs beyond four-digit SICs for distribution among subclusters proved beyond the scope of the study. In addition, some individual companies participate in more than one subcluster, a data challenge also beyond this study.

**Wages by Subcluster: 1995 and 2001**

Wages among Basic Industries subclusters show differing trends. As would be expected, the higher cost of living in Seattle suggests wages in Seattle are higher on average than the average statewide as shown in Exhibit 16. Aerospace is the only exception among subclusters. Boeing's presence outside of Seattle simply increases the number of higher wage jobs outside the City.

Within the cluster, Seafood Processing was the only subcluster to see declines in average wages from 1995 to 2001. This decline occurred only in Seattle companies. Statewide, all subclusters increased in average wages during the study period.

### Exhibit 16: Wages by Subcluster Core Activities

Cluster	Seattle		Washington State	
	1995	2001	1995	2001
Construction & Contracting	\$42,000	\$51,800	\$34,500	\$39,900
Transportation & Freight Distribution	\$41,200	\$48,800	\$36,200	\$40,100
Printing & Publishing	\$36,700	\$42,700	\$39,700	\$43,100
Seafood Processing	\$58,200	\$46,800	\$43,800	\$45,400
Food & Beverage	\$37,000	\$41,500	\$31,100	\$32,600
Aerospace	\$59,800	\$61,400	\$58,900	\$65,100
Industrial Furniture & Fabricated Metal	\$38,100	\$39,700	\$37,800	\$39,800
Stone, Clay, Glass & Concrete	\$38,700	\$42,800	\$34,500	\$38,300
Office & Home Furnishings	\$32,500	\$40,900	\$30,200	\$35,100
All Subcluster Activities	\$43,600	\$48,200	\$40,500	\$44,500

Source: Washington State Employment Securities Department, Puget Sound Regional Council

For each of the subclusters, industry representatives helped map the activities that together compose the subcluster. The interviews helped identify key issues facing the future of each subcluster, and data analysis provided important context for the role each subcluster plays in the Seattle economy. Elements of each subcluster analyzed in this report include the following:

- **Overview.** An assessment of the state of the subcluster, drawing from analytics and interviews.
- **Subcluster map.** The subcluster maps demonstrate the complexities and inter-relationships of businesses that participate in each subcluster. Within each map the organizing hierarchy of core activities, locally necessary and related activities are presented to describe the relationships of the subcluster with their presence in Seattle.
- **Jobs.** The study utilized data from 1995 and 2001 (the most recent year available for detailed analyses).
- **Wages.** Like the jobs data, wages data come from Washington State Employment Security Department.
- **Location Quotients.** Indices that indicate the degree to which jobs are concentrated in Seattle, relative to the three-county region.
- **Tax Revenues.** Sales tax, B&O tax, and utility tax revenues generated for the City, provided by the City of Seattle and the Washington State Department of Revenue reflect the fiscal contributions of business revenues.

## Construction & Contracting Subcluster

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**Overview.** Construction companies have a very visible presence in Seattle's industrial areas. However, the construction industry differs from most other Basic Industries in that it is typically an indicator of economic growth, not a driver of economic growth. The number of construction jobs ranks the sector highest among Seattle's Basic Industries subclusters.

The subcluster's Core Activities are driven primarily by Commercial Construction in Seattle. Commercial Construction jobs are more highly concentrated in Seattle than other types of construction, with a location quotient for Commercial Construction alone of 1.2. Seattle's Commercial Construction companies serve the greater region from their Seattle bases.

For all of the subcluster's Core Activities, special trade contractors and heavy infrastructure contractors locate elsewhere in the region in greater relative numbers than Seattle (location quotient of 0.7 for the subcluster as a whole).

The nature of construction work, of course, is that much of the work takes place at sites other than the base of the company. Employees may not report to the headquarters offices for many days or even weeks for larger projects. The Seattle locations of these companies do, however, provide a home base and maintenance yards for heavy equipment, trucks and other large assets.

Jobs have grown substantially in construction in recent years, adding 4,000 jobs from 1995 to 2001 (4.8% average annual

growth). Special Trade contractors accounted for more than half of this growth, adding 2,300 jobs during this period. Commercial Construction added 1,400 jobs, with these categories together accounting for nearly all of the growth.

**Issues and Outlook.** Most of the issues that are affecting the industry are local in nature. Many contractors view their location as their main advantage, which allows them to foster relationships with suppliers and gain access to a network of trucking companies. Competition in this subcluster is described as primarily regional with some national competition on larger projects.

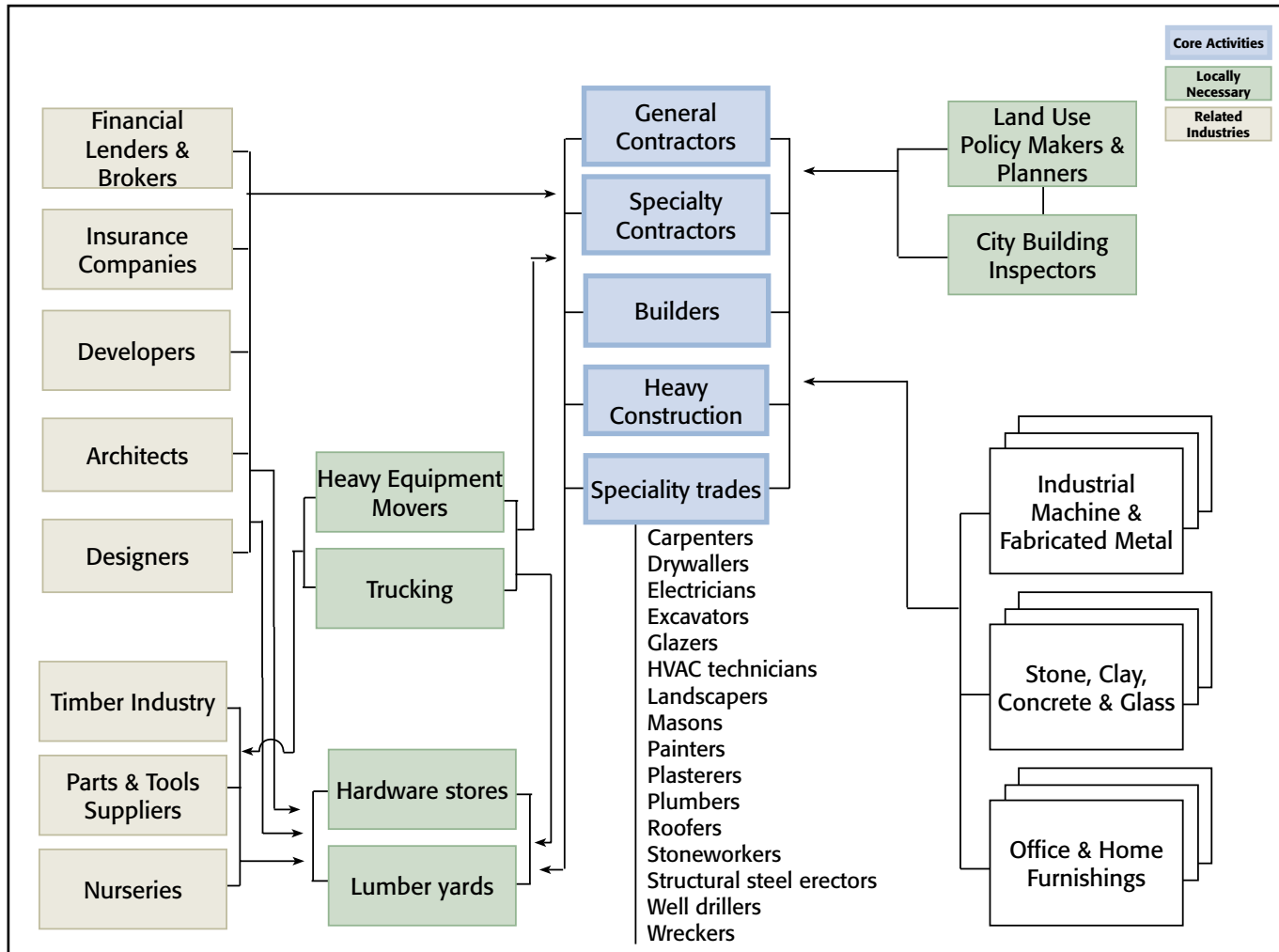
In the local market, there is a sense of a downturn in the private office market due to oversupply, a slowing in development of public-sector projects and fewer highway projects.

In addition to economic factors, businesses cited congestion as the key issue affecting their industry. Congestion adds to costs and limits ability to move equipment.

All of the businesses interviewed are in Seattle because they have "always been here" but many agree that it doesn't make business sense to expand here and would rather expand into new geographic markets.

Interviews were conducted with heavy construction, general and specialty contractors.





## Core Activities

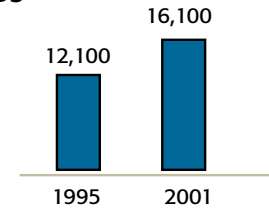
- Construction (SIC 2452)
- Commercial Construction (SIC 1531; 1541-42)
- Heavy Infrastructure Contractors (SIC 1611; 1622-23; 1629)
- Special Trade Contractors (SIC 1711; 1721; 1731; 1741-43; 1751-52; 1761; 1771; 1781; 1791; 1793-96)
- Miscellaneous Special Trade Contractors (SIC 1799)

## Locally Necessary Activities

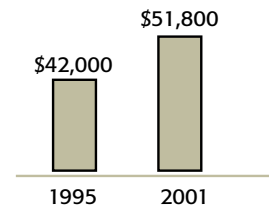
- Architectural & Engineering Services (SIC 8711-13)
- Retail Construction Supplies (SIC 5211; 5231; 5251)
- Labor Ready Groups (SIC 7363)

## Core Activity Metrics in Seattle

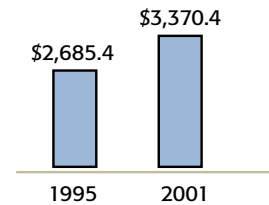
### Jobs



### Average Wage (2001\$)



### Gross Revenues (millions; 2001\$)

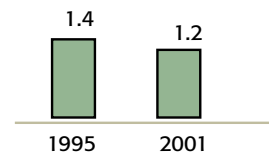


## Seattle's Comparative Advantage

### Location Quotient

(Compared to three-county region)

### Construction



## Transportation & Distribution Subcluster

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**Overview.** All Basic Industries depend greatly on transportation, which is at the center of Seattle's industrial areas. Many companies in other subclusters facilitate distribution of their own products, own their own trucks and employ drivers and other related jobs—all of which blurs the boundaries of this subcluster. The companies of interest in the Transportation & Distribution Subcluster are those that devote themselves exclusively to transportation.

The Core Activities in this sector consist of companies that actively move products from one place to another, inside and outside of Seattle and the region, using trucks, trains, planes and ships. Of those modes, it is the airborne and waterborne transportation that drive Seattle's comparative advantage.

Airborne transportation centers on Boeing Field and the distribution companies that benefit from close proximity. An important data issue presents itself in understanding air transport: United Parcel Services (UPS) changed its identity (and SIC code) from a Trucking company to an Air Transport Services company sometime between 1995 and 2001. The Air Transport location quotient of 1.9 relative to the region shows the concentration of these jobs in Seattle.

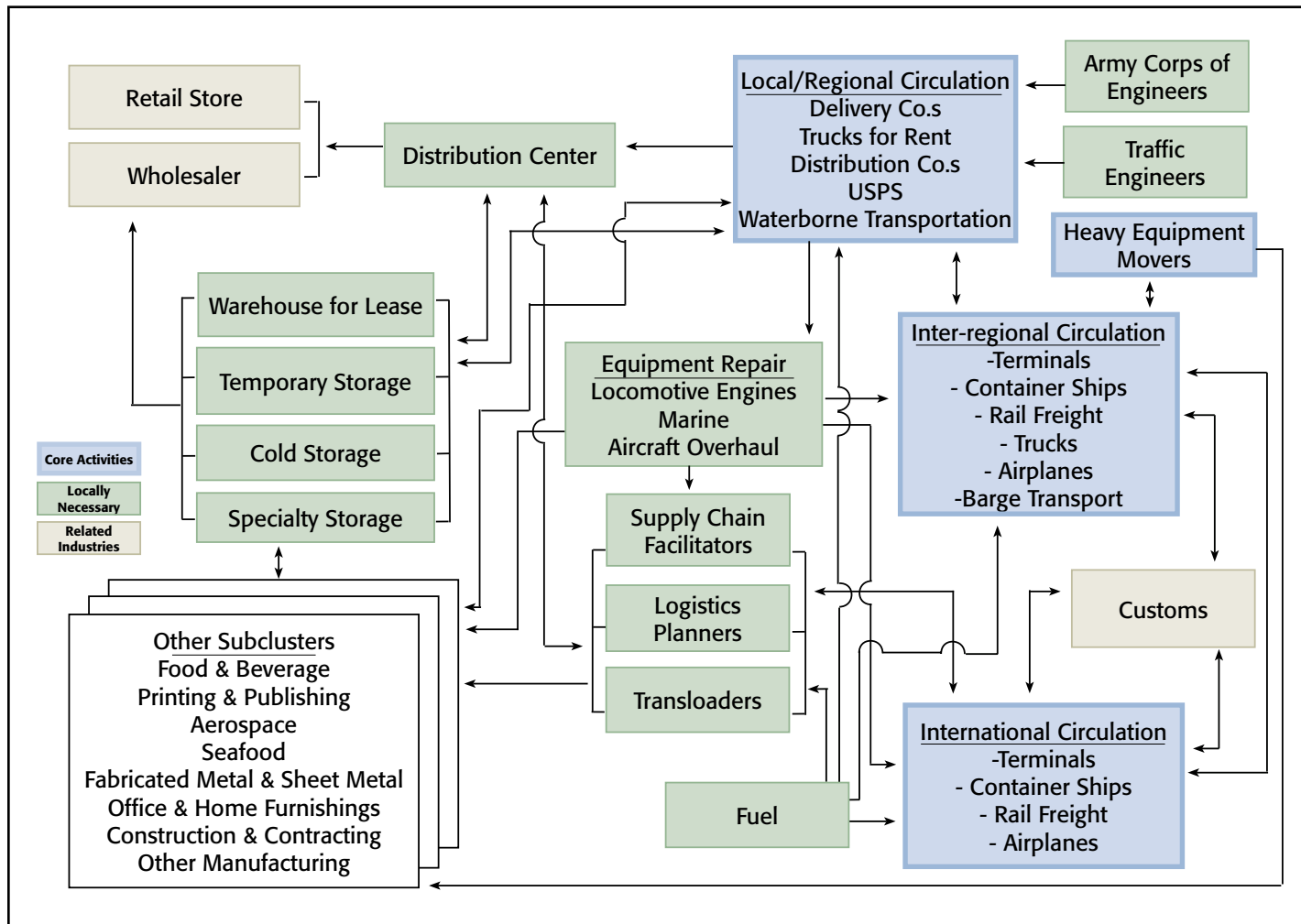
The region and State's Water Transport jobs are heavily concentrated in Seattle. Seattle's 4,000 Water Transport jobs represent more than 70% of the region's. Seattle's location quotient for Water Transport is 2.3 compared to the region and 2.5 relative to the State.

**Issues and Outlook.** Interviews for this study found that the locally owned businesses have a long history in Seattle (ranging from 34 to 103 years) and a strong customer base. Access to the transportation network provided by rail, freeway access, and access to Port terminals provide their key location advantage. Businesses cite the differing needs of pedestrians and freight traffic as increasingly impairing freight mobility in congested areas in and around the stadium and Port terminals.

Traffic congestion, attributed to higher density uses, appears to have complex effects on business economics. Congestion itself is believed to contribute to increasing prices of land and facility costs, as companies pay more for locations that can reduce their need to fight traffic. In other cases, employees have reportedly left for competitors in Kent Valley to reduce their commute times. Congestion increases time in transit and is exacerbated by increasing costs of fuel and insurance.

Overall, the industry is reportedly facing consolidation, contraction and diversification. Growth is linked to expansion into new markets, lines of business, expanded territory, acquisition or improvements in the global economy. Few companies feel expansion in the region makes sense given the current economy, market share and costs of business in the City and State.

Several key activities were represented in the interviews, including transloading, trucking, and heavy equipment movers involved in local, regional, national and international circulation; distribution; and engine repair activities.



## Core Activities

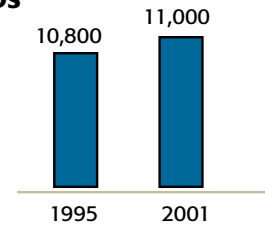
- Air Transport Services (SIC 4512-13; 4522; 4581)
- Railroads (SIC 4011; 4013)
- Trucking (SIC 4212-15)
- USPS (SIC 4311)
- Water Transport (SIC 4412; 4424; 4432; 4449; 4491-93; 4499)

## Locally Necessary Activities

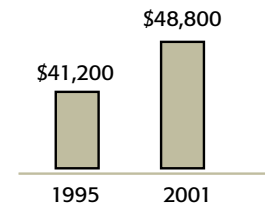
- Engines (SIC 3511; 3519)
- Refrigerated Warehousing & Storage (SIC 4222)
- Self-Storage & Miscellaneous (SIC 4225)
- Warehousing (SIC 4221)

## Core Activity Metrics in Seattle

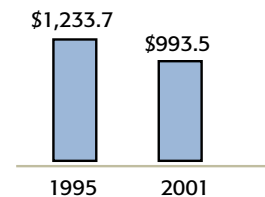
### Jobs



### Average Wage (2001\$)



### Gross Revenues (millions; 2001\$)

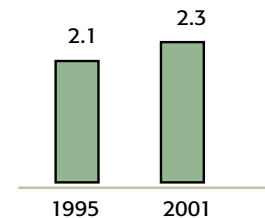


## Seattle's Comparative Advantage

### Location Quotient

(Compared to three-county region)

### Water Transport



## Printing & Publishing Subcluster

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**Overview.** The Core Activities in the Printing & Publishing Subcluster in Seattle are Commercial Printing and Publishing, which includes Newspapers. Together these activities represent a greater share of Seattle's economy than at the region and State levels, as the companies in the City serve a market reaching beyond City limits.

Only a few other activities are Locally Necessary to serve the Core Activities. Cover Production and Book Binding are most notable, as they are integrated into the publishing process, though frequently executed by specialty companies.

The size of Seattle's printers varies widely. The largest, GM Nameplate, employs 450 people in Seattle, according to company officials. Of the 275 other Commercial Printing companies in Seattle, 250 employ fewer than 50 people. (Commercial Printing excludes copy shops such as Kinko's and others.)

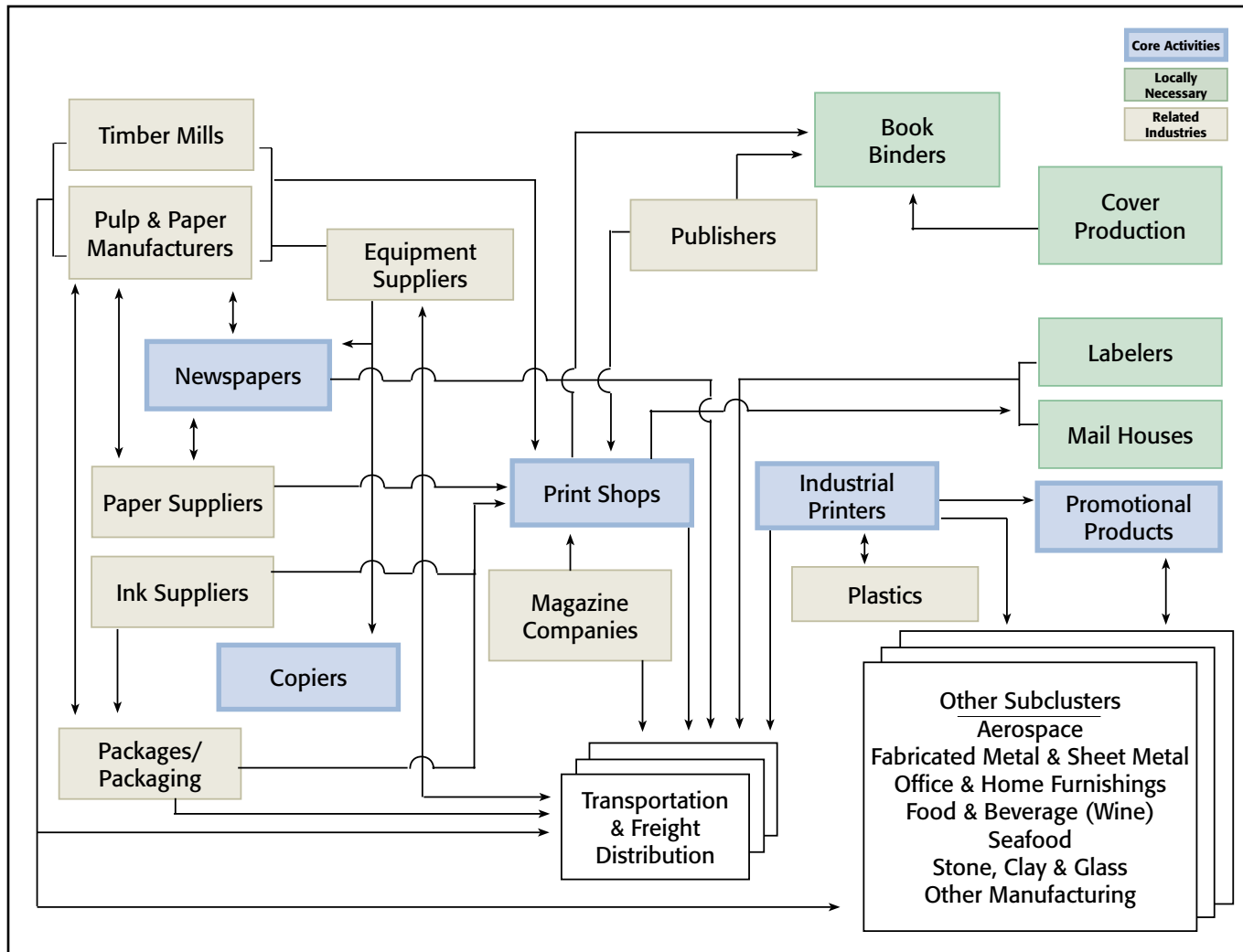
Larger companies, such as GM Nameplate, have a variety of customers as well, reflecting the many objects and surfaces on which they print (everything from coffee mugs to airplane panels). The nature of the smaller print companies varies as well, serving a wide range of Basic Industries and service sector needs.

**Issues and Outlook.** Two key issues facing this subcluster result in fewer purchases of equipment and lay offs: technology and the economy. Printing technology is changing rapidly, requires continual reinvestment, and is affecting print shops as more firms and homeowners can do their own printing on laser printers. Economic downturns lead customers to cut back their printing, requiring print shops to serve them in an inventory-on-demand model.

Seattle's comparative advantage within the region appears to erode rapidly for Related Activities in this subcluster. Paper houses and other suppliers have reportedly moved to the Kent Valley in noticeably large numbers.

This industry seems to fluctuate frequently, and companies interviewed expect direct mail to lead future growth, thanks largely to the federal government's "do not call" list. Promotional printing and materials is another area of growth for Seattle's printers.

Interviews were conducted with print shops, industrial printers and those who produce promotional products. Most of those interviewed view their competition as primarily local, with the exception of industrial printers, who face more international competition.

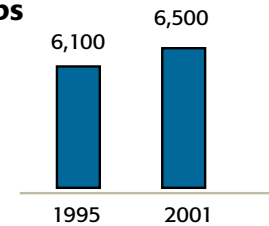


## Core Activities

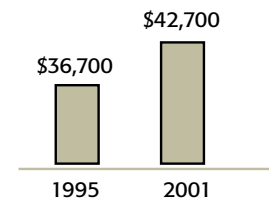
- Commercial Printing (SIC 2752; 2754; 2759)
- Paper Products (SIC 2611; 2621; 2631; 2552-53; 2655-57; 2671-79)
- Publishing (SIC 2711; 2721; 2731-32; 2741; 2789)
- Signs (SIC 3993)

## Core Activity Metrics in Seattle

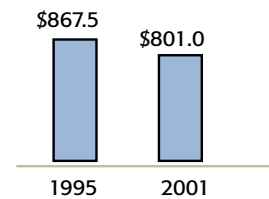
### Jobs



### Average Wage (2001 \$)



### Gross Revenues (millions; 2001 \$)

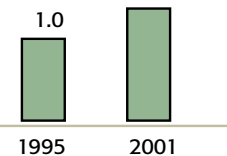


## Seattle's Comparative Advantage

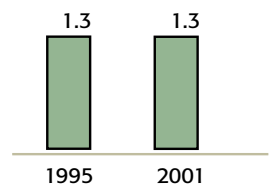
### Location Quotient

(Compared to three-county region)

### Commercial Printing



### Publishing



## Seafood Processing Subcluster

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**Overview.** The Seafood subclusters might best fit Professor Michael Porter's clusters framework. Location quotients show a clear concentration of jobs in Seattle: 2.7 relative to the region; 3.1 relative to the State. Seattle's 6,100 jobs in this subcluster's Core Activities account for 60% of the State's total employment.

Several companies identified by SICs as either in Fishing or Seafood Processing are nearly identical. Companies that harvest fish from the sea frequently process and sometimes even package the fish onboard their trawlers. Frozen Food captures a few companies that process seafood without harvesting, and those companies might process other frozen foods as well.

Similarly, some of the Locally Necessary activities are accomplished by Seafood companies. Cold Storage, in particular, is vertically integrated by the largest seafood harvesting companies. Some of the cold storage locally is operated by independent companies, varying in size and the degree to which they serve Seafood as a percentage of their overall business.

The subcluster operates in a global market but relies on the proximity of support industries, such as ship repair, packaging supplies, printing labels and industrial equipment activity.

The subcluster is deeply connected to the Maritime Cluster study, conducted separately by OED. Marinas, boat manufacturers, maritime labor and many other activities within the Maritime Cluster play major roles in the success of Seattle's Seafood Subcluster.

**Issues and Outlook.** This industry has undergone much change in recent years, as technology improvements have led to consolidation, which has had a dramatic decline of smaller fishing

companies. Employment as a result has decreased substantially as well. The larger companies, in contrast, have added jobs and expect to see continued growth ahead.

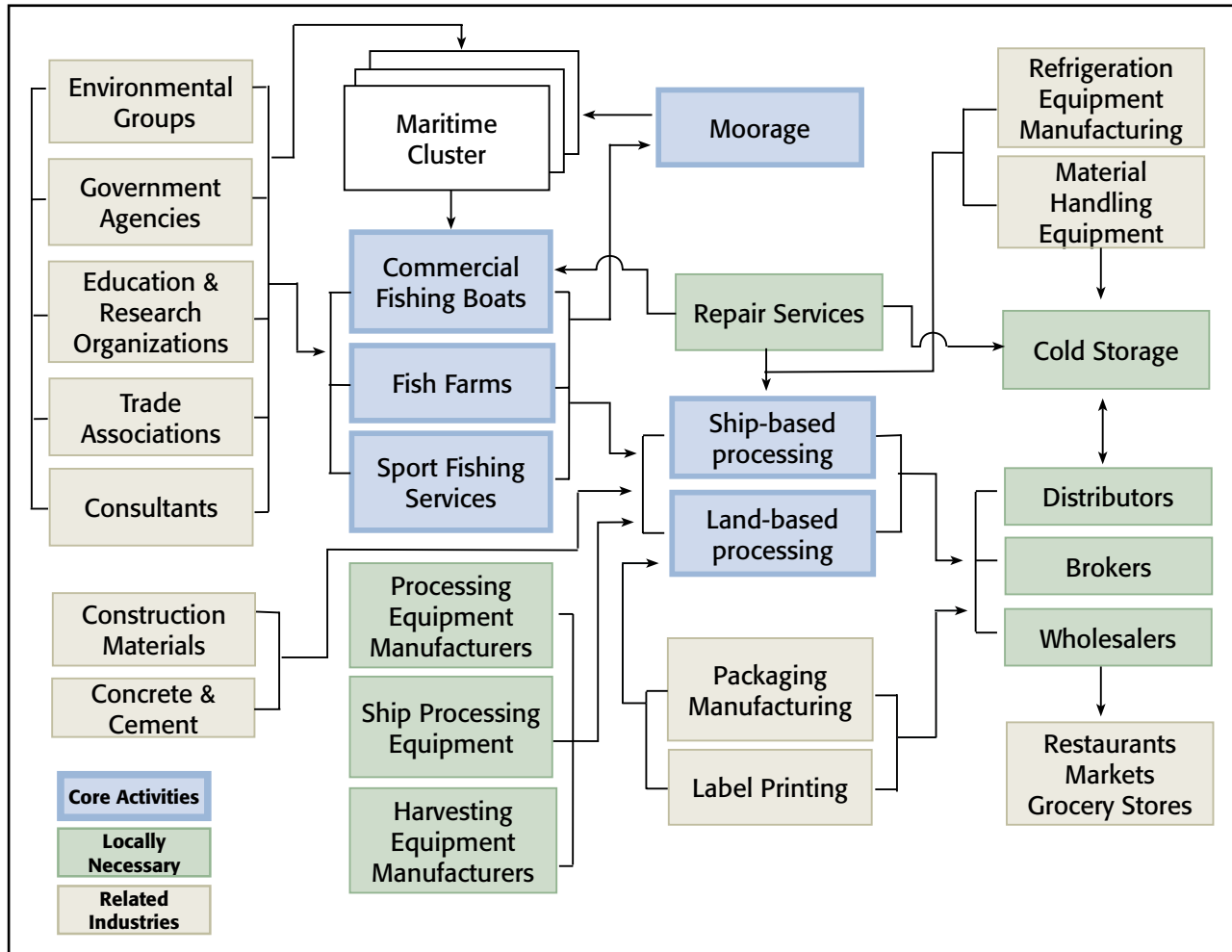
Jobs declined in the Seafood subcluster from 7,700 jobs in 1995 to 6,700 jobs in 2001, among companies associated with the subcluster core activities.

Similarly to the Transportation & Distribution Subcluster, access to the transportation hub of the interstate highways, railroad, and access to overnight deliveries out of Seattle are cited as the key advantage to the subcluster. Increasing congestion is a big concern associated with the Alaskan Way Viaduct, the I-5/I-90 interchange, and ferry, ball game, container, and cruise ship traffic.

There is also concern about whether planned transportation improvements will displace key facilities in the subcluster. Locally, companies perceive limited hours of access to the Port's terminals, B&O taxes and building permit delays as barriers to remaining competitive in Seattle.

Interview contacts included businesses in commercial fishing, ship-based and land-based processing and cold storage activities. The businesses are particularly long-time Seattle employers, many dating back to the beginning of the 1900s.

# Seafood Processing Subcluster



## Core Activities

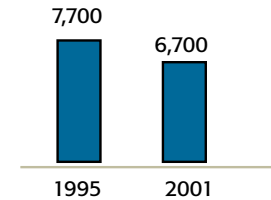
- Fishing (SIC 0912-14; 0919; 0921)
- Seafood (SIC 2091-92)

## Locally Necessary Activities

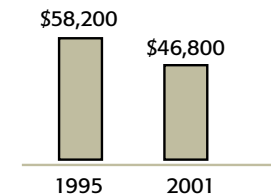
- Refrigerated Warehousing & Storage (SIC 4222)

## Core Activity Metrics in Seattle

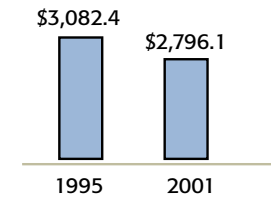
### Jobs



### Average Wage (2001\$)



### Gross Revenues (millions; 2001\$)

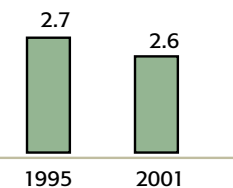


## Seattle's Comparative Advantage

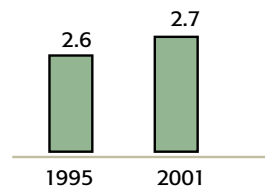
### Location Quotient

(Compared to three-county region)

### Fishing



### Seafood





## Food & Beverage Subcluster

---

**Overview.** Seattle's concentration of restaurants provides an opportunity to foster Food & Beverage producers, in hopes that some might find the right product and model to grow into major exporters. Several businesses in the Food & Beverage Subclusters have already shown this potential: Da Vinci Gourmet (flavored syrups), Seattle Chocolate Company, Gai's Bakery and others. The subcluster as a whole, however, appears to generally fit within Seattle's economy similarly to its role at the region and State levels (thus the location quotients at or near 1.0).

Seattle's beer brewers add to the City's jobs in the Beverage Core Activity. Beverages do not include Starbucks, which is classified as a retailer along with restaurants.

Seattle's bakeries lead Food Production employment and bakeries jobs are notably dispersed among many smaller companies (38 companies in Seattle with a bakery SIC; other restaurants likely are bakeries as well).

Many of Seattle's Food & Beverage companies have grown from small businesses serving neighborhoods or small niches. As such, many of the firms locate here because the owners lived here, the business has always been here, or they are located in the middle of their client base.

**Issues and Outlook.** Jobs declined in the subcluster core activities from 7,000 in 1995 to 5,900 in 2001. The primary issues affecting businesses in the industry include:

- The health and success of customers (especially those who serve the restaurant industry).
- Changing trends and health interest of customers (more organic, less carbohydrate).

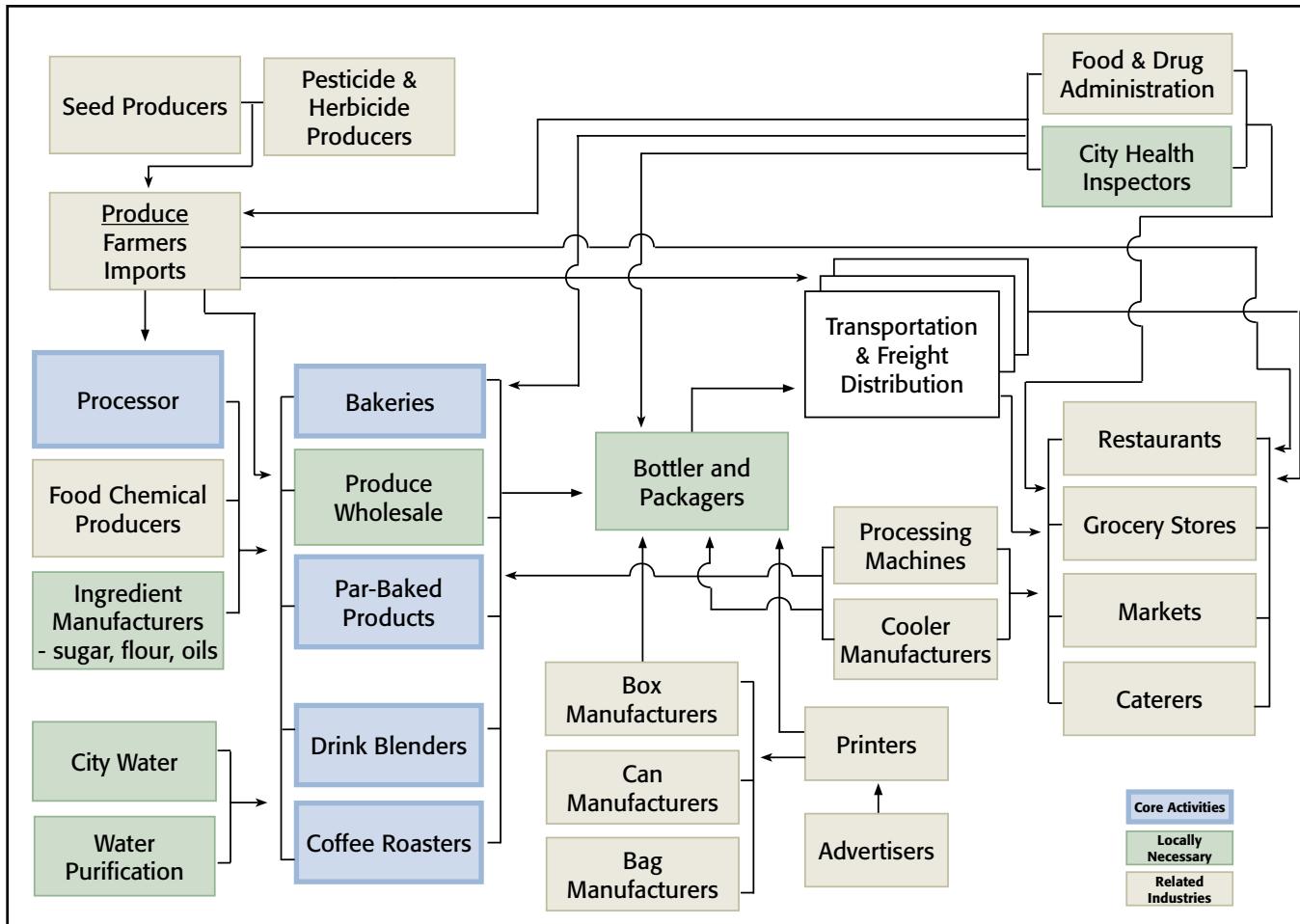
- Price and availability of raw materials (the international supply chain, the economy or unrest in other countries affects price).
- Finding appropriate locations in Seattle for business needs and operations.

Most businesses in Food & Beverage see growth opportunities outside of Seattle, but only if they move outside of the Pacific Northwest. In other words, they do not foresee needing another location to better serve other Pacific Northwest markets. Businesses interviewed generally recognize that they could easily or should be located somewhere else.

Businesses interviewed included produce importers and wholesalers, bakeries, bottlers and packagers in specialty products and food preparation activities that operate in a locally or nationally competitive market.



## Food & Beverage Subcluster



### Core Activities

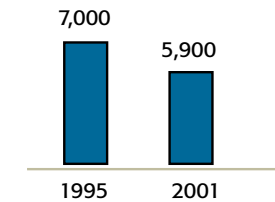
- Beverage (SIC 2082-87)
- Dairy (SIC 0241; 2021-24; 2026; 5143)
- Food Production (SIC 2032-35; 2037-38; 2041; 2043-48; 2051-53; 2061-64; 2066-68; 2074-77; 2079; 2096-99)
- Groceries (SIC 5143)
- Meat Production (SIC 2011; 2013; 2015)

### Locally Necessary Activities

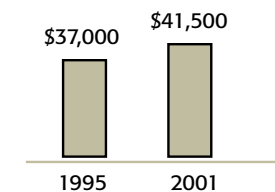
- Alcoholic Beverage Wholesalers (SIC 5181-82)
- Paper Products (SIC 2611; 2621; 2631; 2652-53; 2655-57; 2671-79)
- Paper & Packaging Wholesalers (SIC 5113)
- Refrigerated Warehousing & Storage (SIC 4222)

### Core Activity Metrics in Seattle

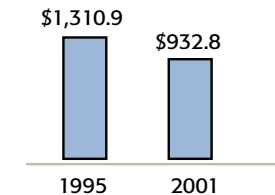
#### Jobs



#### Average Wage (2001 \$)



#### Gross Revenues (millions; 2001 \$)

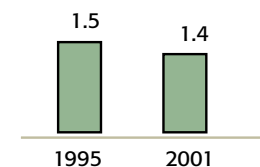


### Seattle's Comparative Advantage

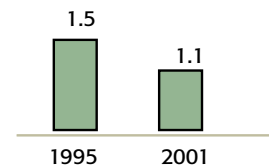
#### Location Quotient

(Compared to three-county region)

#### Beverage



#### Food Production



## Aerospace Subcluster

---

**Overview.** Aerospace jobs in Seattle include Boeing and 22 smaller companies, nearly all of which have fewer than 100 employees. Boeing employment in Seattle has changed over time and throughout Boeing's employment cycles. Most jobs in Seattle have been in Boeing's buildings in the southern portion of Seattle, centered near Boeing Field.

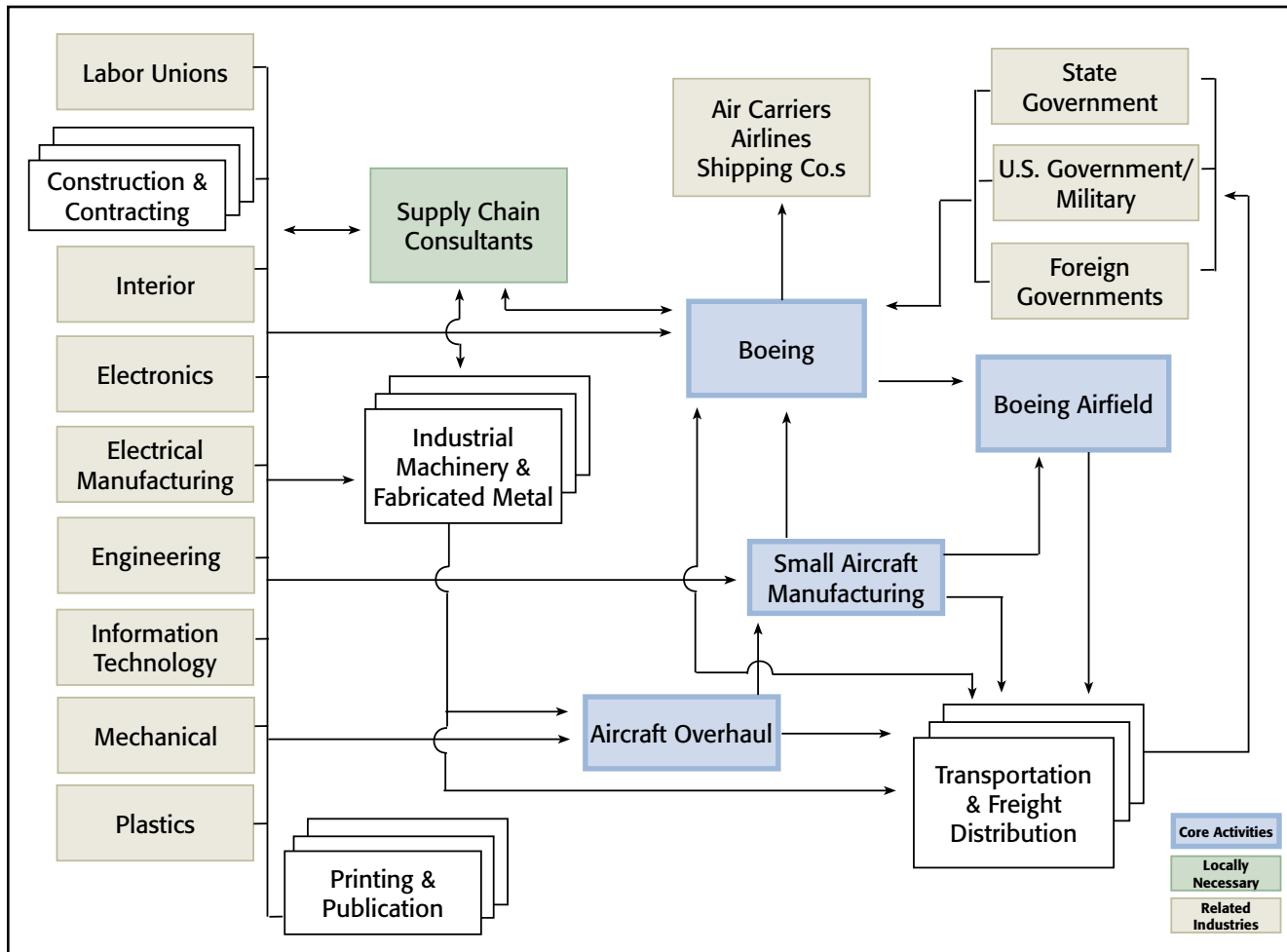
A few smaller parts providers are located in Seattle. Companies in this industry, perhaps more than the others in Basic Industries, have diversified their clients to serve customers other than Boeing. Some may have started serving Boeing exclusively, but have found a range of clients to sustain business — clients both in aerospace and in other industries, most notably maritime.

The large numbers of aerospace jobs elsewhere in the region overshadow the concentration of aerospace jobs in Seattle, resulting in location quotients between 0.2 and 0.4 in 2001. The uncertainty of future Boeing employment within the region looms large regarding the future of Seattle's share of aerospace jobs.

**Issues and Outlook.** International competition is the key factor in the industry, as it is influenced by the worldwide gross domestic product (GDP), profitability of airline industry and investments in the military. Many of the suppliers to the industry draw regionally from raw material suppliers who produce worldwide.

A key factor for local firms in the industry is their centralized location to Boeing plants and manpower. For others, location is viewed as less important given the global nature of the market. However, Seattle firms interviewed stressed that their role in the subcluster is broader than manufacturing solely for Boeing, though the region's aerospace industry is thoroughly connected to Boeing and the same issues are facing Boeing employment regionally.

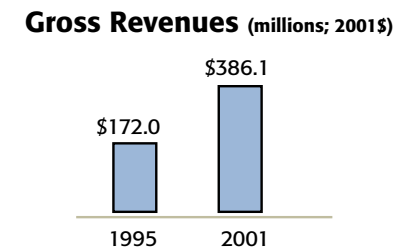
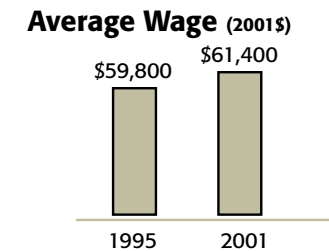
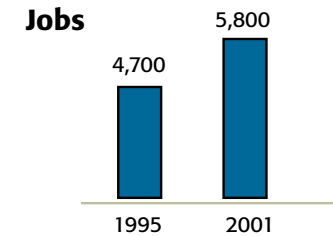
In the Aerospace subcluster, conversations were held with representatives of Boeing and other subcluster activities including electrical manufacturing, electronics, interiors, and other inputs for small aircrafts, commercial aircrafts and the military.



## Core Activities

- Aerospace (SIC 3721; 3724; 3728; 3761; 3764; 3769)

## Core Activity Metrics in Seattle



## Seattle's Comparative Advantage

**Location Quotient**  
(Compared to three-county region)

### Aerospace



## Industrial Machine & Fabricated Metal Subcluster

---

**Overview.** Analysis began on this subcluster focus on sheet metal and fabricated metals. The subcluster map shows the inter-relatedness of the metalworking industry, and connections to industrial machinery suggested that these activities all combine to form one subcluster of interest.

The largest concentration of jobs within this subcluster is in Fabricated Metal (1,750 jobs in Seattle in 2001). As with the entire subcluster, the number of jobs decreased at those businesses between 1995 and 2001.

Within the region, jobs in Primary Metals have notably concentrated in Seattle, with a location quotient of 1.5 in 2001. This relative concentration decreased from 1.8 in 1995.

**Issues and Outlook.** Businesses in this industry face international competition and cite international trade issues as the key factor affecting business in the subcluster. Others serve customers who have moved away due to trade-related issues.

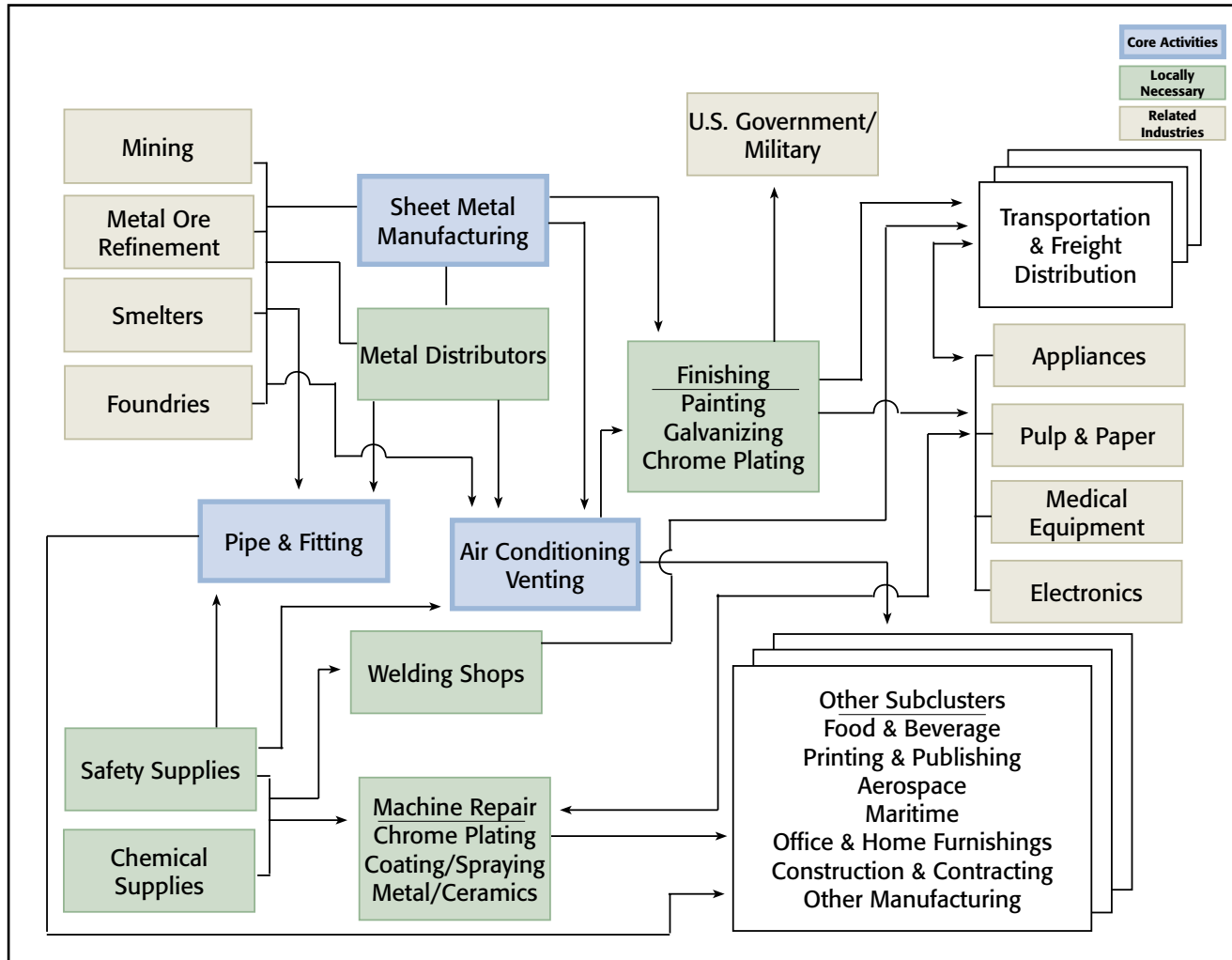
Seattle is viewed as a good location because of access to customers, suppliers and the transportation network – including barge traffic and freeways. Most recognize the importance of and benefits associated with clustering, supporting critical local support such as galvanizing. The presence of two galvanizing plants in Seattle works to the advantage of businesses in the subcluster. No galvanizing plants exist in Alaska and Seattle's galvanizing plants serve the Alaska market, illustrating the value of clustering buyers for galvanizing plants.

Some businesses in the cluster report difficulty finding qualified employees. Others claim that the reasons for being located in Seattle have declined; several firms in the industry grew around

successful pulp and paper, marine and aerospace industries. Businesses interviewed were not ready to move and cited the expense of moving heavy equipment as a deterrent for moving to another location.

Activities represented by this subcluster through interviews include structural steel, machinery repair, metal distribution and pipe manufacturing/metal fabrication businesses. The businesses interviewed were long-term (26-95 years old), locally-owned Seattle businesses.

# Industrial Machine & Fabricated Metal Subcluster



## Core Activities

- Construction Machinery (SIC 3531-33)
- Fabricated Metal (SIC 3411-12; 3421; 3423; 3425; 3429; 3429; 3431-33; 3441-44; 3446; 3448-49; 3451-52; 3462-63; 3465-66; 3469; 3471; 3479; 3482-84; 3489; 3491-99)
- Food Products Machinery (SIC 3556)
- Machinery & Other Machinery (SIC 3523-24; 3559; 3561-69; 3585-86; 3589; 3592-94; 3596; 3599)

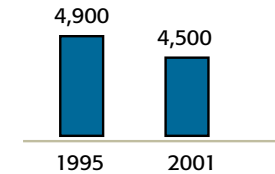
- Metalworking Machinery (SIC 3534-37; 3541-49)
- Primary Metals (SIC 3312-13; 3315-17; 3321-22; 3324-25; 3331; 3334; 3339; 3341; 3351; 3353-57; 3363-66; 3369; 3398-99)
- Paper Industries & Printing Machinery (SIC 3554-55)
- Textile Machinery (SIC 3552)
- Woodworking Machinery (SIC 3553)

## Locally Necessary Activities

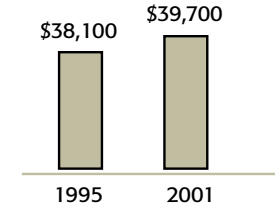
- Miscellaneous Repair (SIC 7631; 7641; 7694; 7699)

## Core Activity Metrics in Seattle

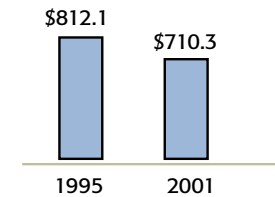
### Jobs



### Average Wage (2001\$)



### Gross Revenues (millions; 2001\$)

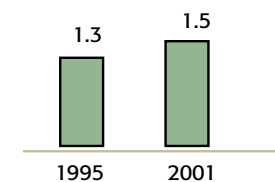


## Seattle's Comparative Advantage

### Location Quotient

(Compared to three-county region)

### Primary Metals



## Stone, Clay, Glass & Concrete Subcluster

---

**Overview.** In analysis for this study, these activities originally were linked to construction and contracting. Through the course of interviews, however, the activities appeared to relate to one another in their own subcluster meriting distinct analysis. The subcluster ranked high for studying to understand the relationship of how this subcluster and its 1,600 jobs relates to other Basic Industries.

Glass products form the largest Core Activity within this subcluster, with a regional location quotient of 1.7 in 2001. Glass Products includes a small handful of companies that produce sheet glass, window panes and glass containers.

**Issues and Outlook.** As with other subclusters, access to the transportation network for freight movements is a key issue for this subcluster. Most companies in this subcluster use water transportation, rail and the arterial road infrastructure network. Some companies move the majority of raw material via waterborne transportation. For them proximity to water is a key factor for locating in Seattle.

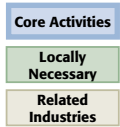
Businesses in this subcluster recognize an economic incentive to locate near suppliers of raw materials and major markets. They find that the high cost of building a similar facility elsewhere is a deterrent to moving.

Interviewees identified issues that appear to erode the benefits of a Seattle location, including:

- Encroaching non-industrial uses, restricting hours of operation and leading to potential conflicts with pedestrians and others; the Burke-Gilman Trail was advanced as a prime example.

- Slow economy, competing imports, international competition and environmental regulations.
- Perception of declining construction projects for airport, road, and other major construction.
- Local costs to businesses – rising gas and electricity costs.
- Potential impact of major projects in area.

Activities represented in the interviews by the Stone, Clay, Glass & Concrete subcluster included ceramics producers, artists and individual makers, stone cutters, distributors and manufacturers of concrete materials.



- Cement (SIC 3241)
- Clay & Clay Products (3251; 3253; 3255; 3259; 3261-64; 3269)
- Concrete (SIC 3271-73)
- Construction Sand & Gravel (SIC 1442; 1446)
- Glass Products (SIC 3211; 3221; 3229; 3231)
- Stone Production (SIC 1411; 1422-23; 1429; 1455; 1459; 1474-75)
- Stone & Stone Products (SIC 3274-75; 3281; 3291-92; 3295-97; 3299)

- Landscape Services (SIC 0781-83)

## Jobs



(Compared to three-county region)

Year	Number of people in the labor force
1995	1.4
2001	1.7

## Office & Home Furnishings Subcluster

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**Overview.** Seattle appears to possess a relative concentration of wholesalers in home furnishings, a Core Activity in the Office & Home Furnishings Subcluster. In 1995 this concentration was more prevalent, with a regional location quotient of 1.6. The number of jobs at these wholesalers declined by 2001, from 1,500 to 1,100, and the relative concentration declined to a location quotient of 1.1.

**Issues and Outlook.** Interviews with industry representatives suggest that the comparative advantage for Seattle is real, centered around the Seattle Design Center and serving the City's and the region's vast amounts of office spaces and homes. Industry representatives suggest many of the key players in this industry have SICs for Special Trade Contractors. Those involved in office and home furnishing *installations* are grouped in the Special Trade Contractors category and thus aggregated with other contractors, confusing the magnitude of this sector's role in the City.

Key issues affecting the industry are the effects of the global economy, competition with imports and domestic (East Coast) manufacturers and distributors. In the local economy, demand from commercial clients appears to decrease as office vacancies increase, which has been the case in recent years.

Those who have been successful in the economic downturn have found a niche, expanded product line or have made investments in technology to decrease labor costs.

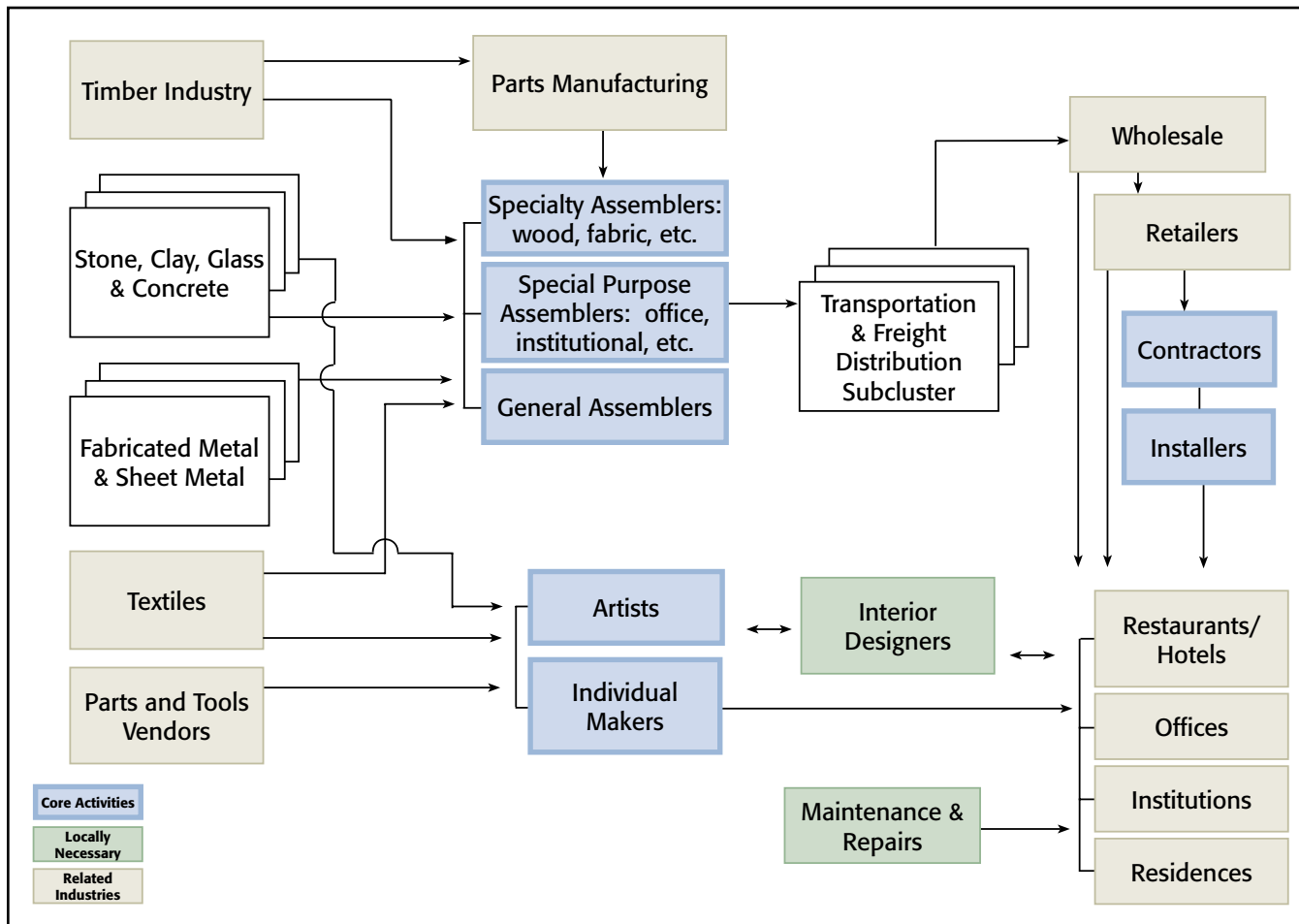
Because of the wide scope of competition, many feel that their business could be anywhere, to avoid what is viewed as the high cost of doing business in Seattle, traffic congestion and purportedly poor business climate. Businesses are deterred from moving,

however, because of the short-term costs, quality of life in Seattle and a perceived appreciation for craftsmanship in the area.

Activities represented in the interviews by the Home/Office Furnishings subcluster included a variety of assemblers, parts manufacturers, artists, individual makers, wholesalers, retailers and installers.



## Office & Home Furnishings Subcluster



### Core Activities

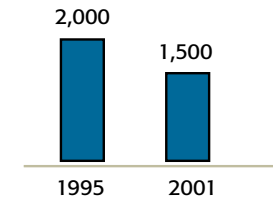
- Furniture & Fixtures (SIC 2511-12; 2514-15; 2517; 2519; 2521-22; 2531; 2541-42; 2591; 2599)
- Wholesale Trade Home Furnishings (SIC 5021; 5023)

### Locally Necessary Activities

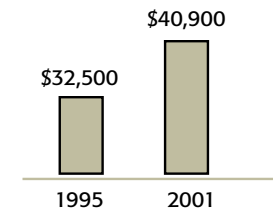
- Miscellaneous Special Trade Contractors (SIC 1799)
- Other Services, Including Interior Design (SIC 7389)

### Core Activity Metrics in Seattle

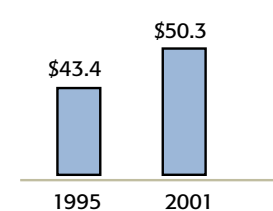
#### Jobs



#### Average Wage (2001 \$)



#### Gross Revenues (millions; 2001 \$)

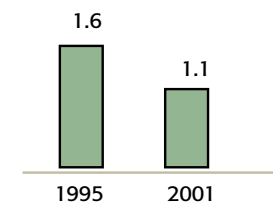


### Seattle's Comparative Advantage

#### Location Quotient

(Compared to three-county region)

#### Wholesale Trade Home Furnishings



## SUMMARY AND CONCLUSIONS

Seattle's Basic Industries include a great variety of economic activities affected by market complexities in many different ways. The Basic Industries have strong connections to Seattle's history as evidenced by companies' histories dating back more than a century. Today's economic climate presents challenges to doing business in Seattle that these companies grapple with continually. Many of their futures look strong in the short-term and less certain further out.

Overall the message has come through clearly from Seattle's Basic Industries Cluster that Seattle is where they want to be, each for different reasons, yet all with some needs in common. In particular, transportation and access to markets are the key reasons for staying in Seattle.

Seattle remains the multi-modal transportation hub for freight. The transportation companies themselves form a subcluster in which Seattle shows a clear comparative advantage, particularly in waterborne and airborne transportation. Basic Industries companies greatly value access to the hub, as well. Varying slightly depending on their role within each subcluster, activities throughout the Basic Industries Cluster express the value of locating near the convergence of rail, trucks, ships and planes for freight distribution.

Seattle shows strengths in some areas of Basic Industries more than others. The core activities of Seafood Processing and Transportation & Freight Distribution account for 6,000 and 11,000 jobs, respectively. Seafood Processing jobs represent a share of Seattle's total employment equal to three times the share of the region's and State's total jobs. Air and Water Transport jobs in Seattle together similarly account for a share of Seattle's total jobs 1.9 to 2.5 greater than at the region and State level.

Growth is occurring in the Core Activities of Construction & Contracting; Transportation & Freight Distribution; Aerospace and Printing & Publishing subclusters. In all other subclusters, jobs have decreased in number from 1995 to 2001.

The future of Basic Industries in Seattle appears uncertain across all subclusters. All face global competition threats, resulting from improved communication, transportation technologies and reduced trade barriers. Boeing's uncertain future relates directly to the future of Aerospace, and indirectly to Printing & Publishing, Industrial Machine & Fabricated Metal and Transportation & Freight Distribution subclusters.

Non-industrial growth and the related market pressures for scarce land in Seattle will continue to challenge expansion for many of the Basic Industries companies. Most desire to remain in Seattle and Seattle remains highly in demand by Basic Industries companies.

## APPENDIX A: BASIC INDUSTRIES STAKEHOLDER INTERVIEWS

A series of 35 Basic Industries Cluster stakeholder interviews were conducted with Seattle businesses. The interviews informed the description of all activities within the subclusters, to help guide the development of the cluster mapping effort and gather appropriate data to explain the scope of the subclusters' employment and fiscal impact. In addition, interview participants identified key issues affecting their business, industry and a set of possible City actions for improvements to the business or subcluster climate.

### Construction & Contracting

- Kit Bratlien, Wick Constructors
- Larry Ness, Ness Cranes
- Rick Jay, Process Heating

### Transportation & Distribution

- Steve Lobe, Alaska Distributors Co.
- Galiano Modin, Hatch & Kirk
- John Odland, MacMillan-Piper
- Peter Whitehead, Nelson Trucking

### Seafood

- Ron Hildebrand, Trident Seafood
- Tom McQuaid, Nordic Cold Storage
- Pat Shanahan, Seafood Marketing Strategy Consultant

### Food & Beverage

- George DePasquale, Essential Baking Company
- Dick Grader, National Frozen Foods Corporation

**About the Businesses.** The list below presents the individuals and businesses that provided information for this study. The Advisory Task Force provided most of the business contacts. The three to six interviews for each subcluster represent a diverse mix of activities within the subcluster. The majority of businesses interviewed were small- to mid-size, 80- to 100-year old, locally owned companies. The youngest businesses interviewed were founded in 1973 and 1986.

- Dave Klick, Northwest Food Processors Association
- Tomio Moriguchi, Uwajimaya
- Bob Viggers, Charlie's Produce
- Rico Yingling, Da Vinci Gourmet

### Industrial Machine & Fabricated Metal

- Mike Kelly, ASKO Processing
- Joe Orint, Flamespray NW
- Doug Rosen, Alaska Copper
- Terry Seaman, Seidelhuber Iron and Bronze Works

### Aerospace

- Bill Cook, JD Ott
- Patricia Keene, Korry Electronics
- Rich White, Boeing

### Printing & Publication

- Bob Brown, Consolidated Press
- Judy Colvert, PrintCom

- Henry Cordes, Minuteman Press
- Don Root, GM Nameplate

### **Stone, Clay & Glass**

- Larry Bruning, Bruning Pottery
- Stewart Kendall, Seattle Solstice
- Paul Nerdrum, Salmon Bay Sand & Gravel
- Russ Simonson, Lafarge Cement

### **Home/Office Furnishings**

- Jerry Carr, JH Carr and Sons
- Howard Eustis, Heartwood
- Harold Foss, Foss Furniture/Veneering
- Kelly Groudle, Seattle Design Center
- Shelia McKinnon, McKinnon Furniture

## APPENDIX B: BASIC INDUSTRY STAKEHOLDER INTERVIEW PROTOCOL

Interviews began with a discussion of the purpose of the study. The stakeholder participant was invited to comment in response to questions about key issues and trends in the industry, benefits or advantages to locating a similar business in Seattle and suggestions for City action to encourage growth within the industry in Seattle.

### Industry Outlook and Trends

1. What are the key issues for your industry right now?
  - What are the growth areas? What's declining and why?
  - How is your industry dealing with the impact of the economy? What have been the effects of the economic decline?
  - Where is the competition coming from – regionally, nationally, internationally?
2. What are the key factors affecting your business in the next five years?
3. How would you assess productivity improvements in your industry?
  - If job reductions have occurred, is this a factor?

- Are there different productivity stories among firms in the industry? (i.e. have there been differential gains by firms or firm type?)

### Seattle-Specific Factors

4. What brought your business to Seattle? What keeps you here?
5. Are you planning additional investment or expansion in Seattle? In the Puget Sound region?
6. What are the benefits or advantages to locating or expanding a business like yours (in your industry) in Seattle?
  - Do you work together/collaborate/joint venture with any firms in your industry?
  - Are you a member of a trade group? If yes, is it a national, regional or local group?
  - In your industry, what are the factors that may deter expansion or business location in Seattle?
7. What are the top two or three actions the City could or should take to encourage growth within your industry in Seattle?